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07091160	17.04.1995	
07035156	23.02.1995	

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A61F 13/15

(52) UK CL (Edition O)
A5R RPG

(56) Documents Cited
GB 2271501 A GB 2182841 A WO 95/08972 A1

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UK CL (Edition O) A3V , A5R RPF RPG
INT CL[6] A61F 13/15

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(54) Absorbent article

(57) The article, which may be a sanitary napkin or disposable diaper, comprises an absorbent member 13 disposed between a liquid permeable topsheet 11 and an impermeable backsheet 12 and lateral flaps 20 xt nding from opposite sides, the flaps being folded to form anti-leakage walls 21 and, outwardly of such walls, anti-leakage surfaces 24. The flaps may be formed by fixing together extended portions of the topsheet and backsheet, by the backsheet or the topsheet alone or by an additional, liquid impermeable sheet and are secured to the absorbent body towards the front and rear thereof. Wing portions for fixing the article in use may be provided.

FIG . 1

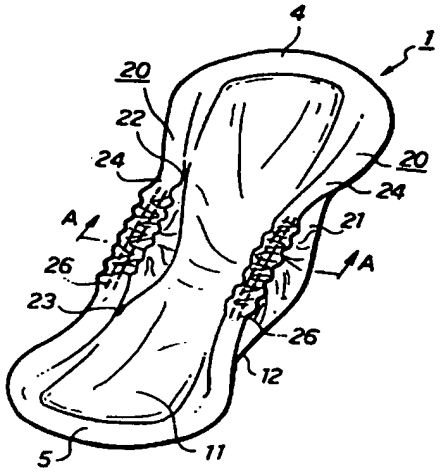

FIG . 2

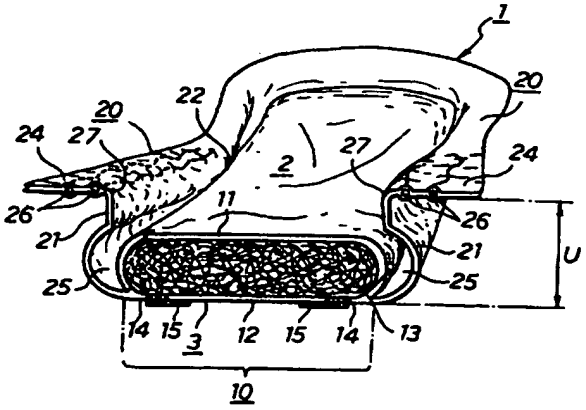

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FIG . 1

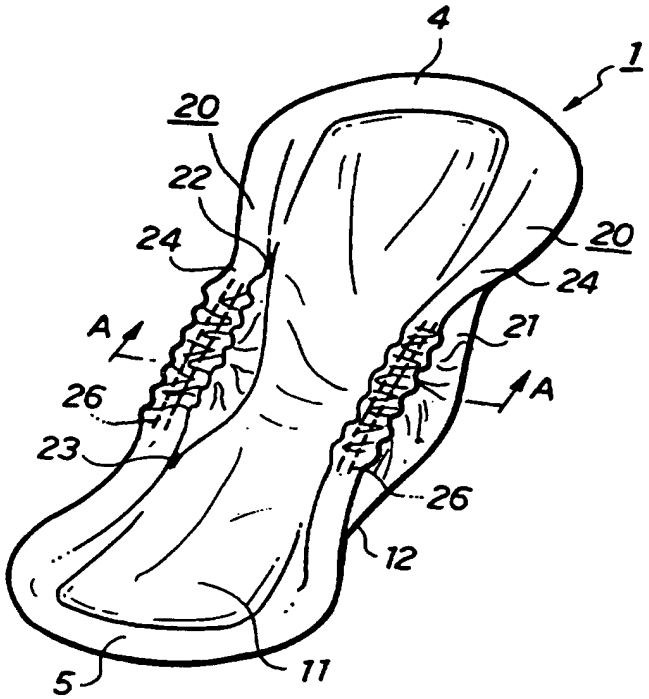
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FIG . 2

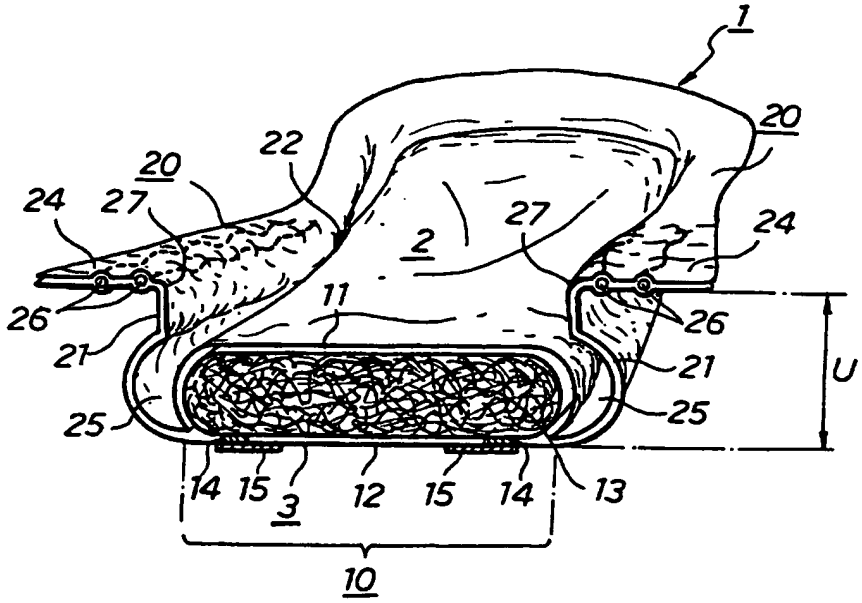
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FIG. 3

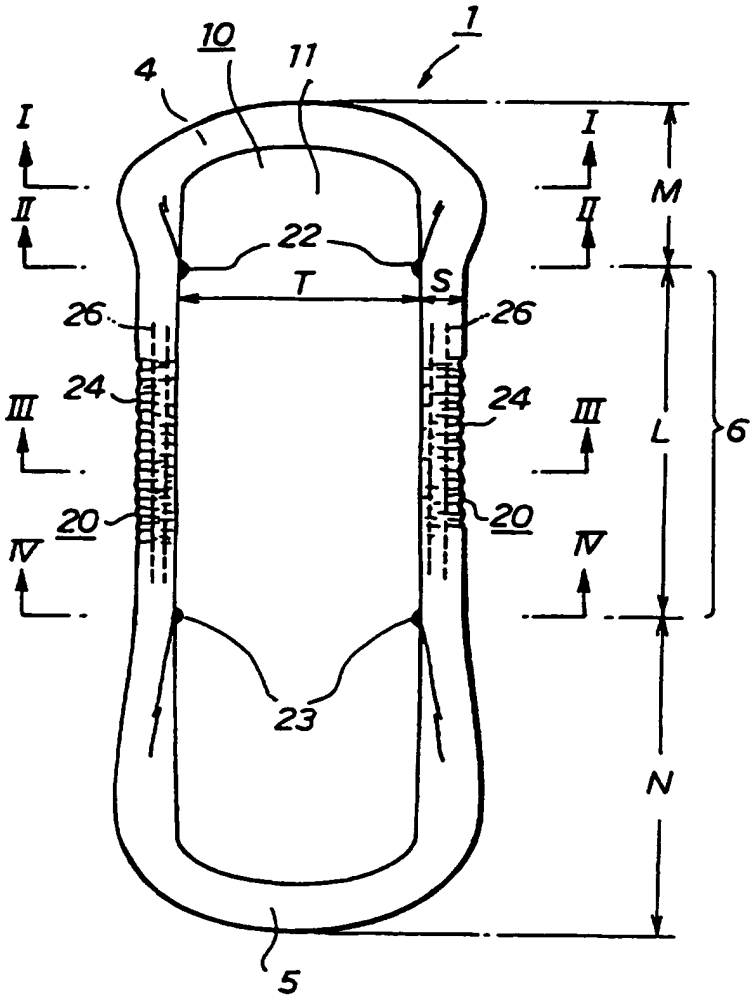


FIG. 4A

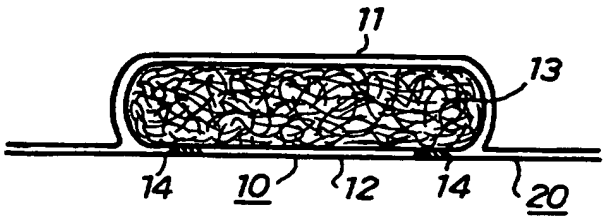


FIG. 4B

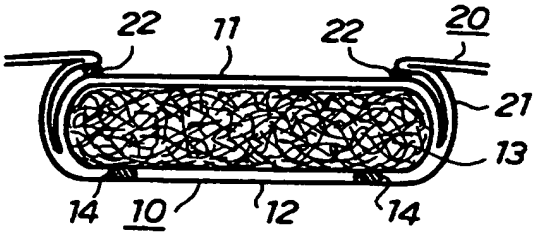


FIG. 4C

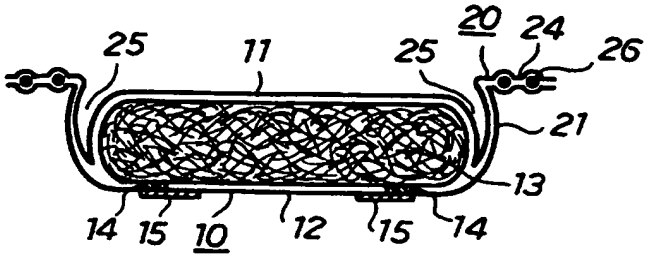


FIG. 4D

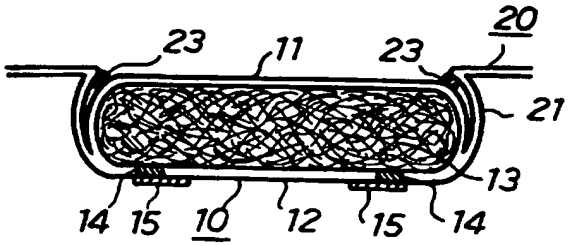


FIG. 5

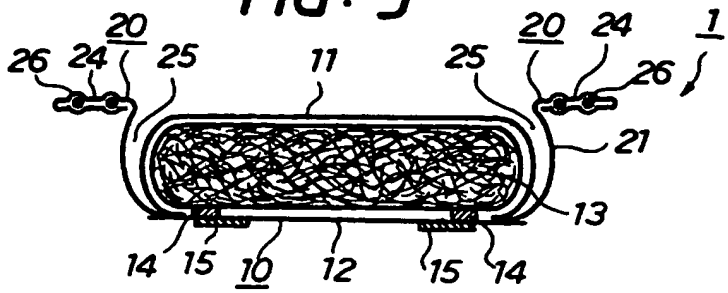


FIG. 6

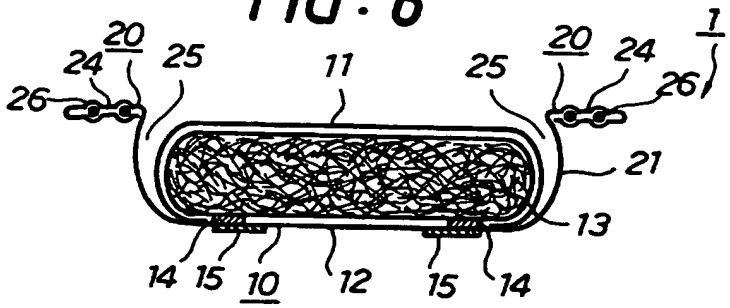


FIG. 7

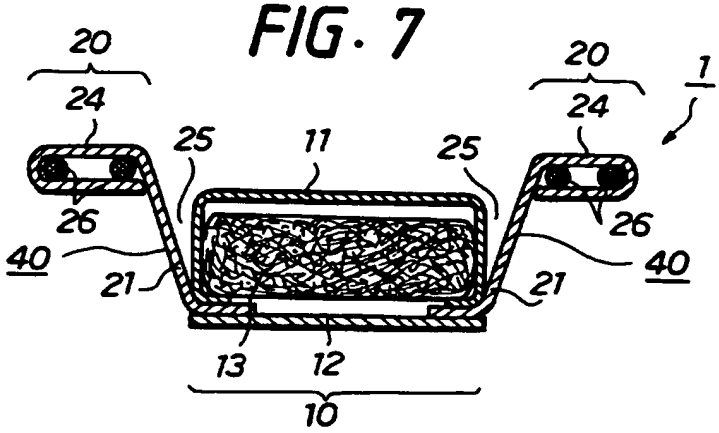


FIG. 8

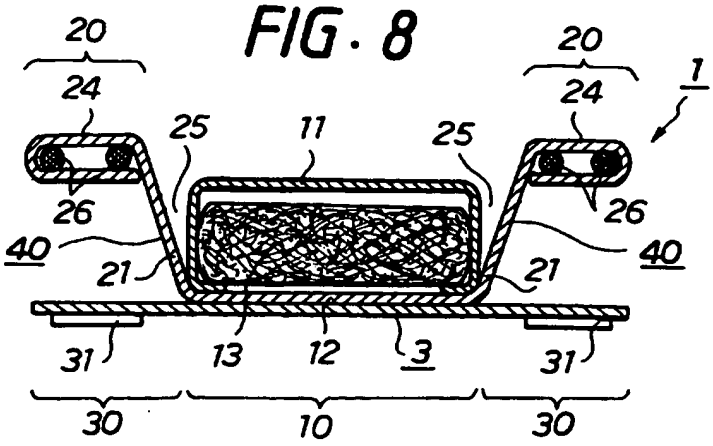


FIG. 9

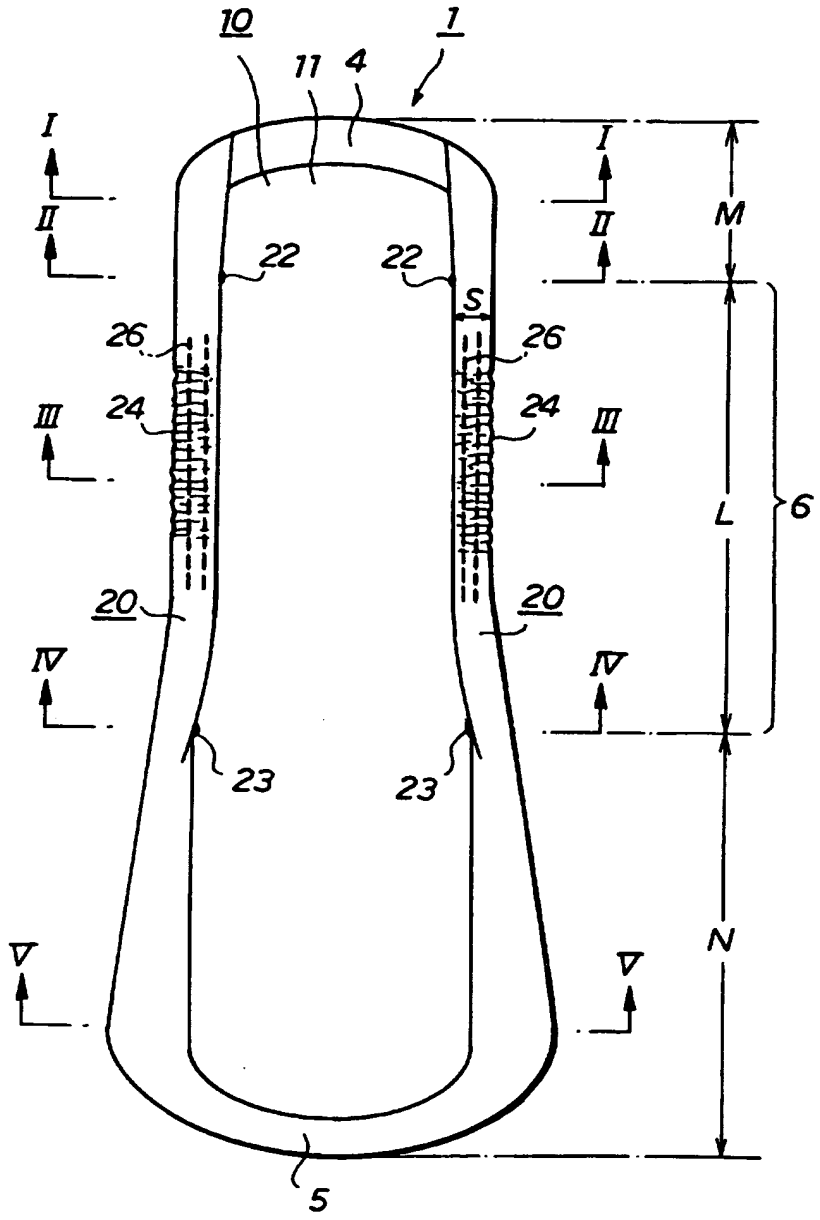


FIG. 10A

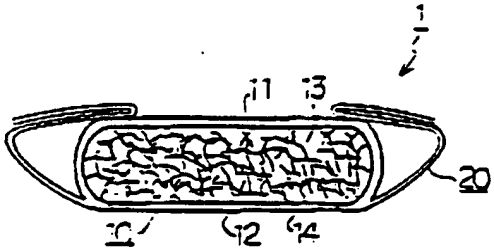
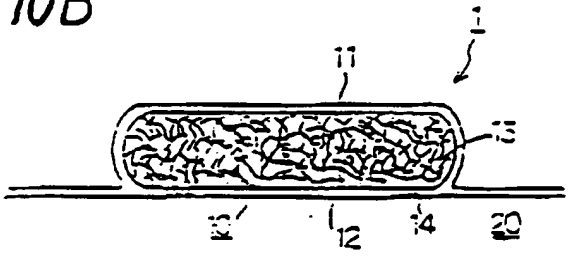


FIG. 10B



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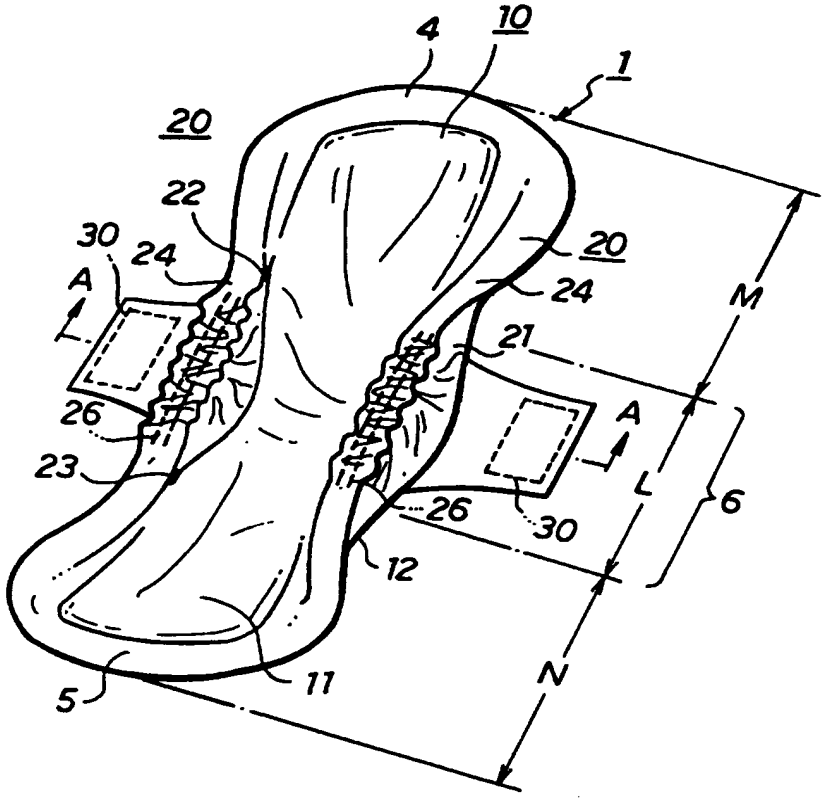
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FIG. 12

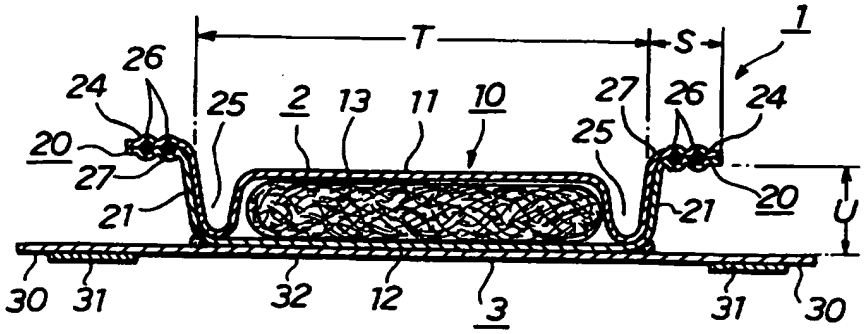
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FIG. 13

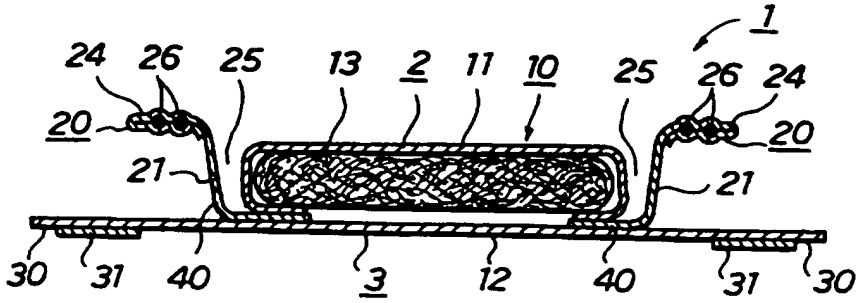
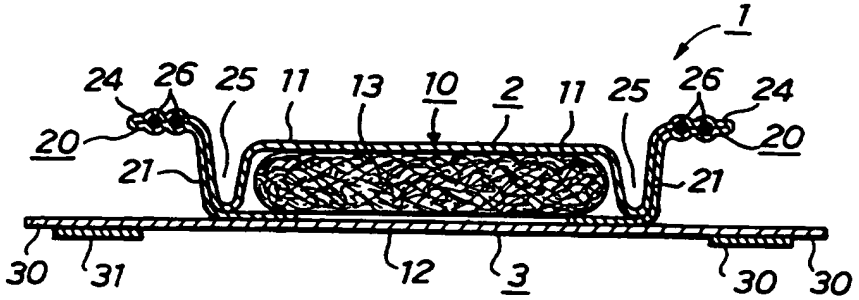


FIG. 14



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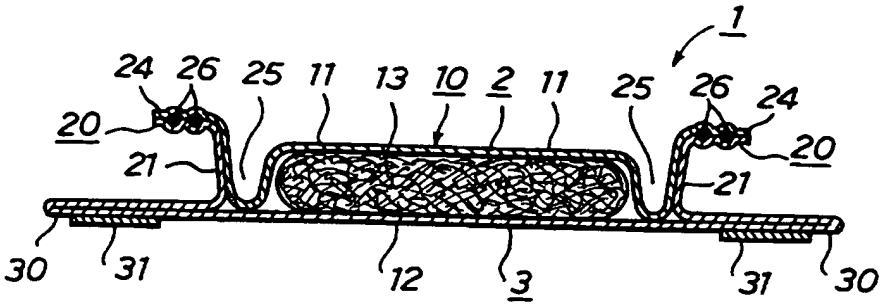


FIG. 16

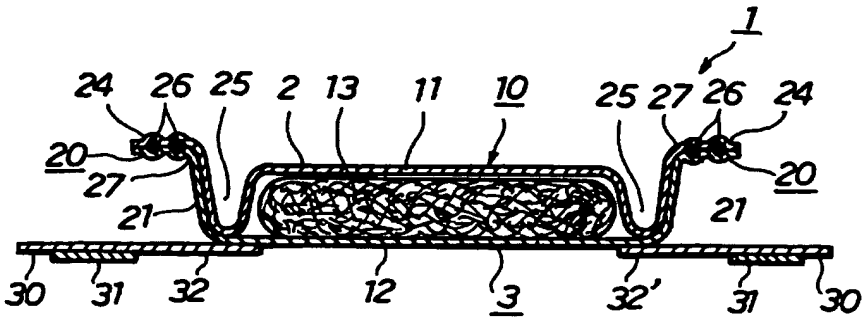


FIG. 17A

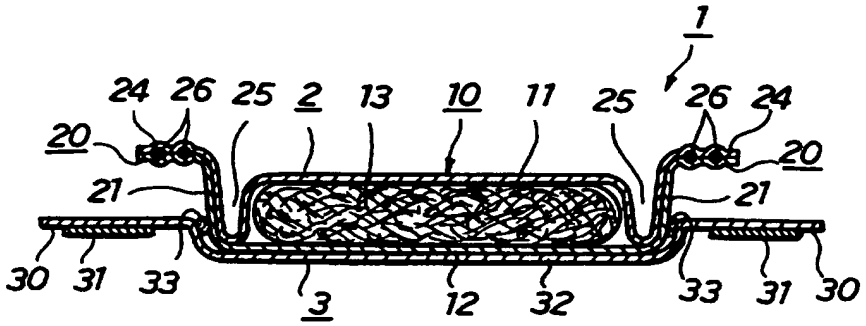
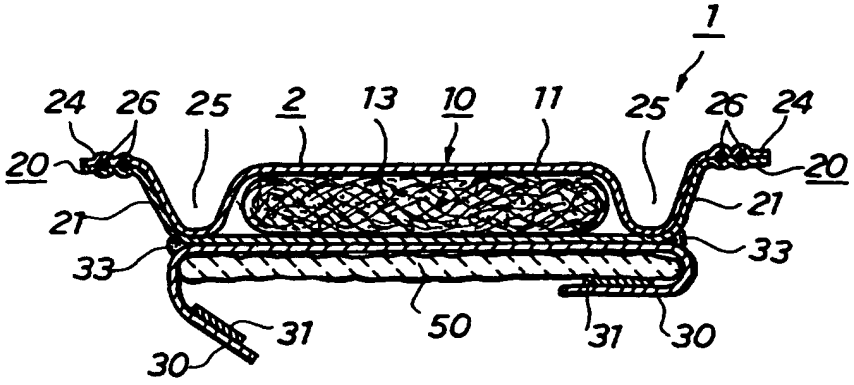


FIG. 17B



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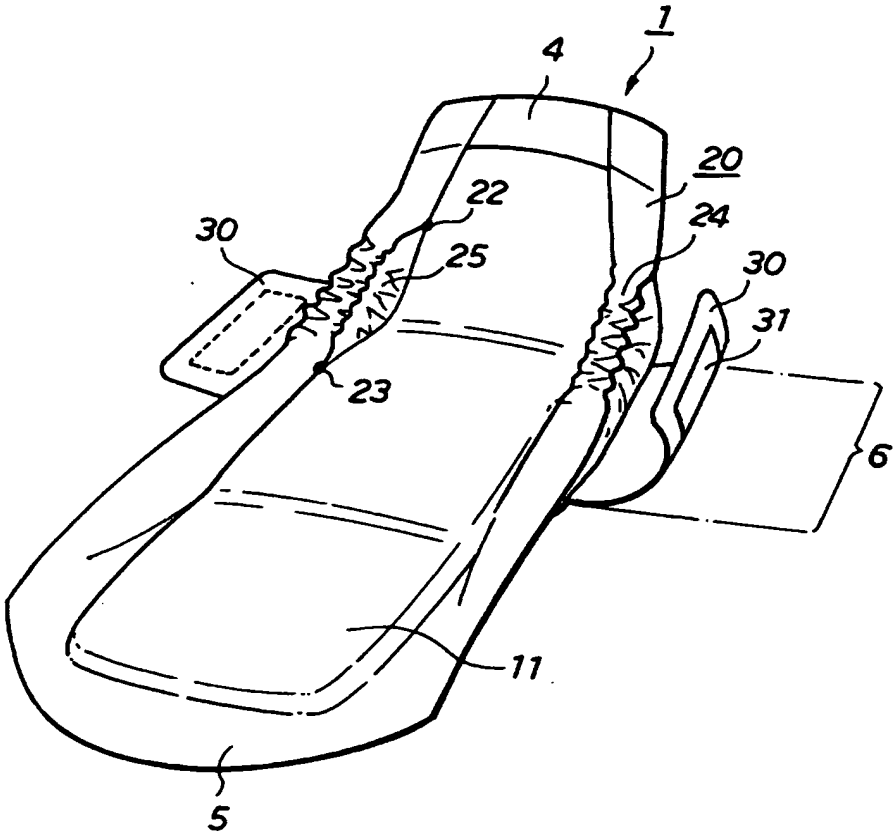

FIG. 19

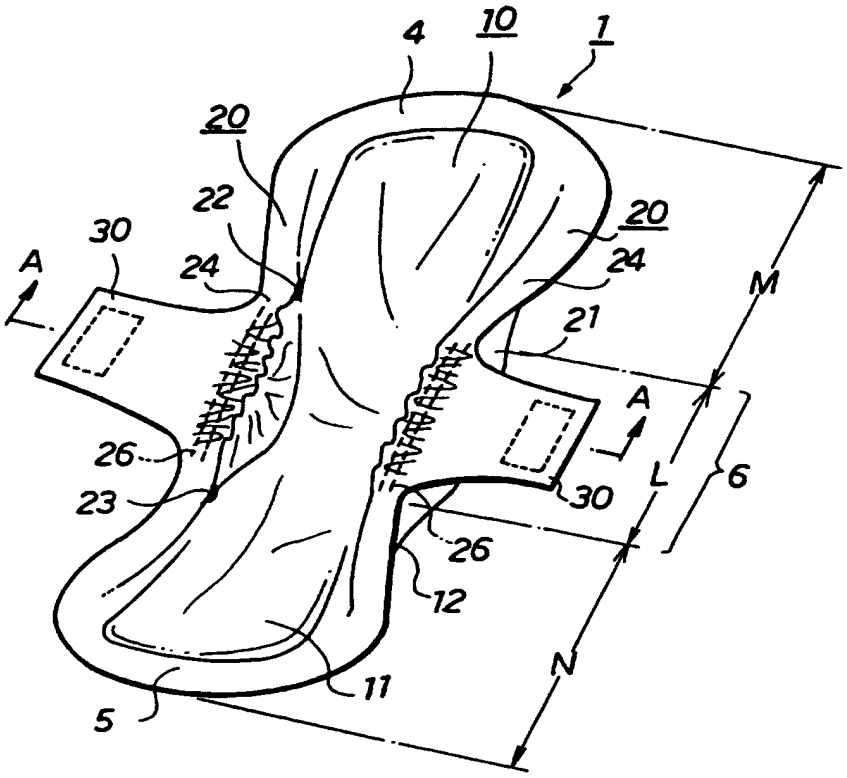
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FIG. 20

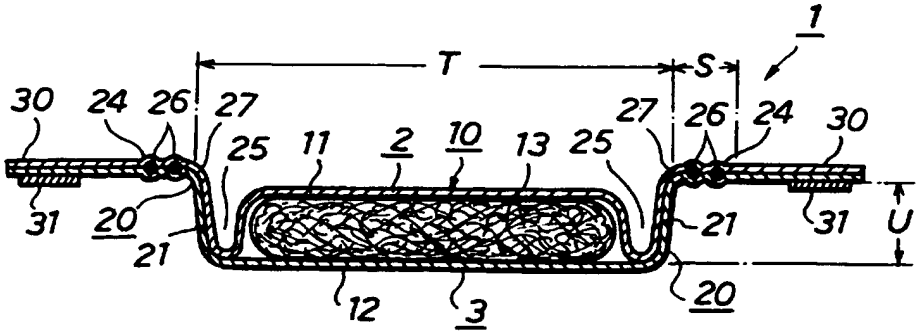
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FIG. 21

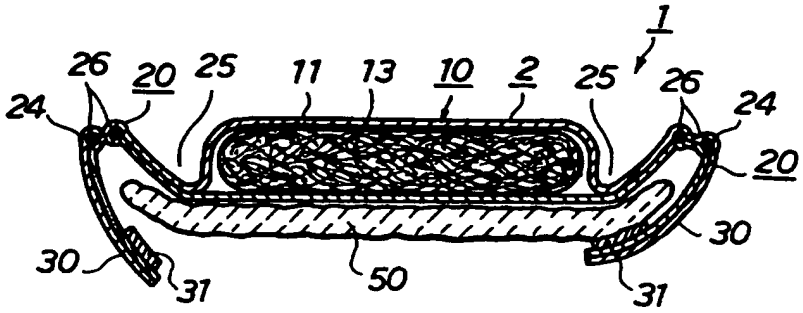

FIG. 22

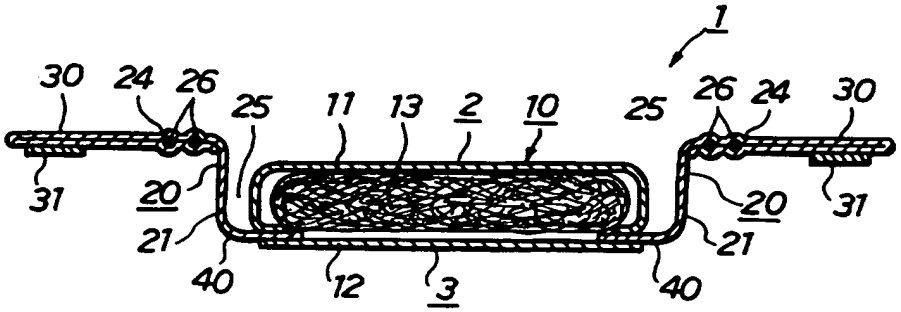

FIG. 23

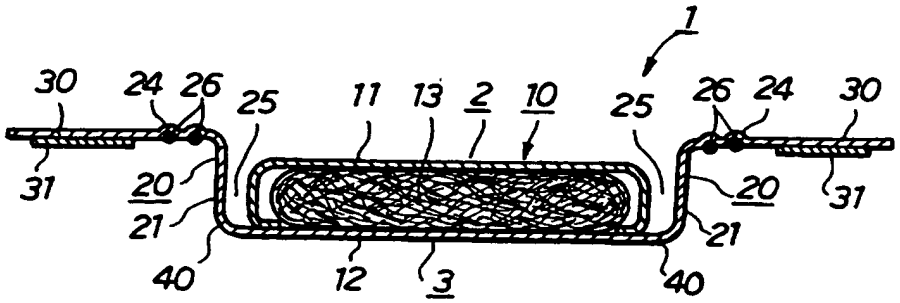

FIG. 24

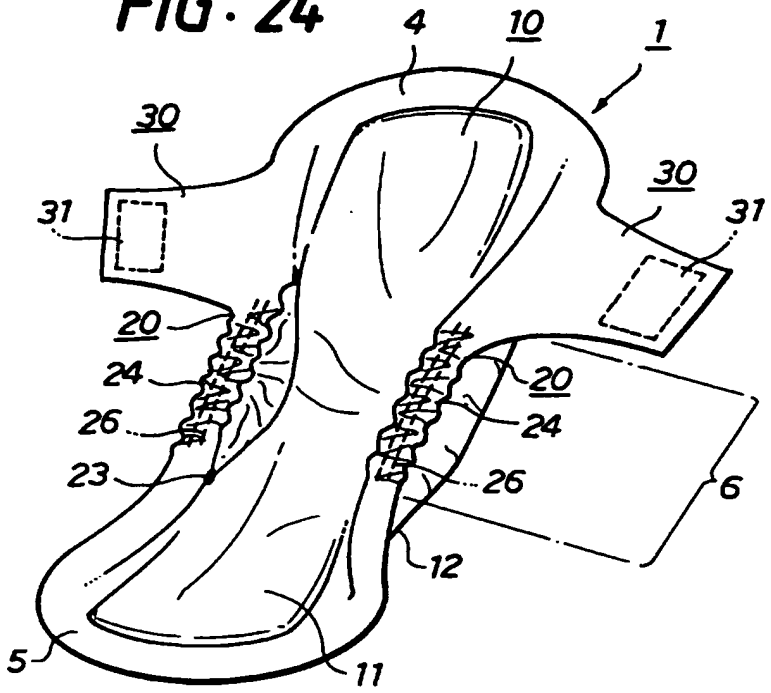

FIG. 25

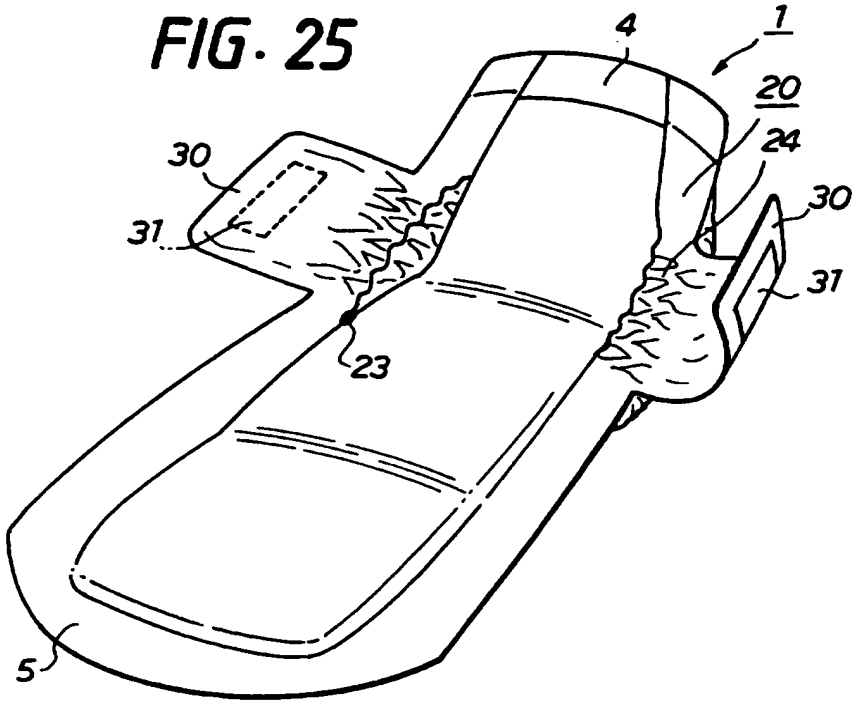

FIG. 26

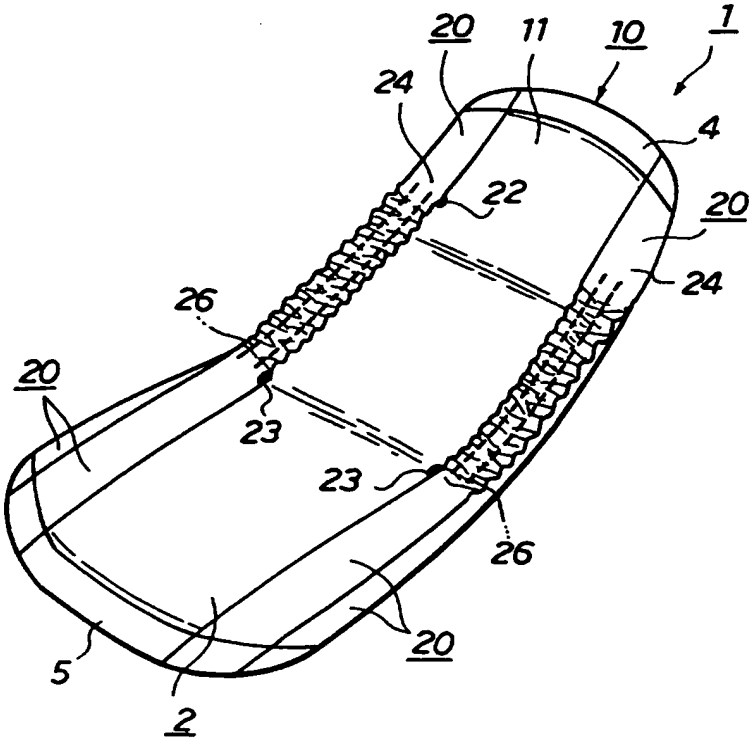

FIG. 27

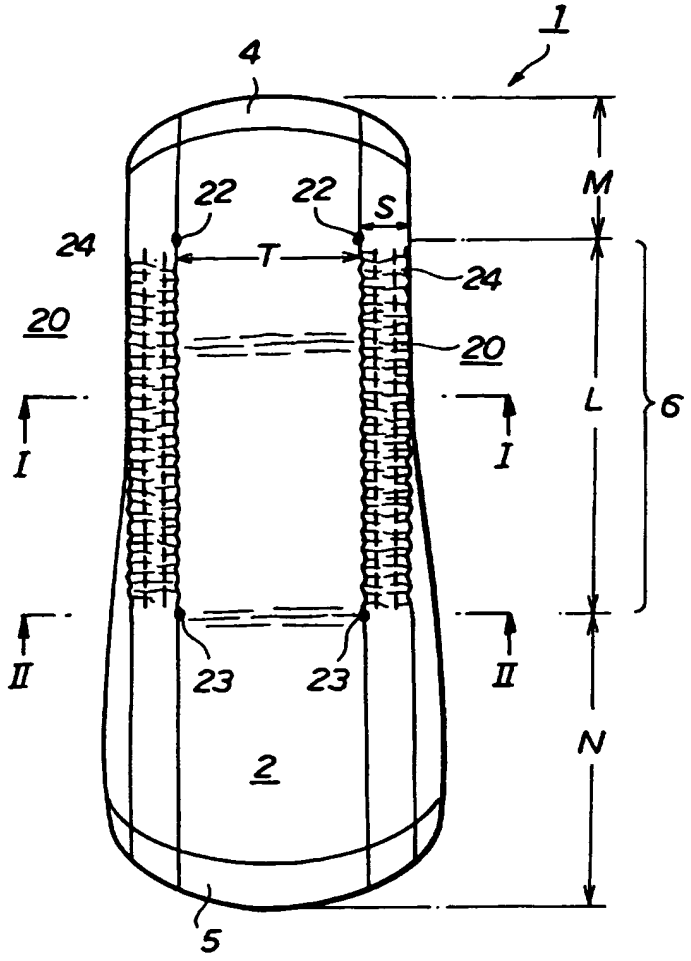
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FIG. 28

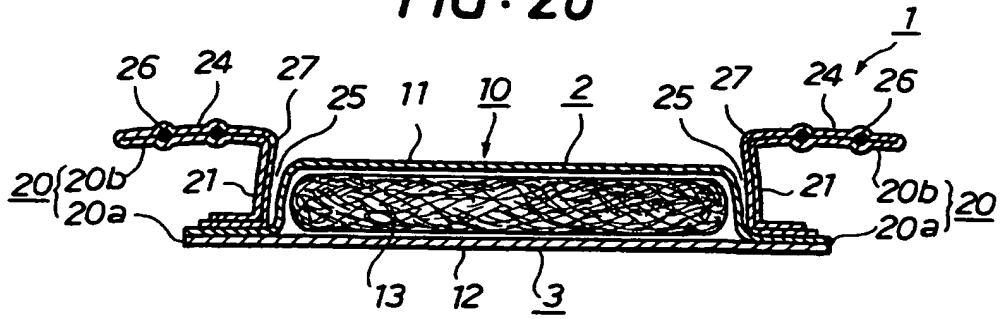
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FIG. 29

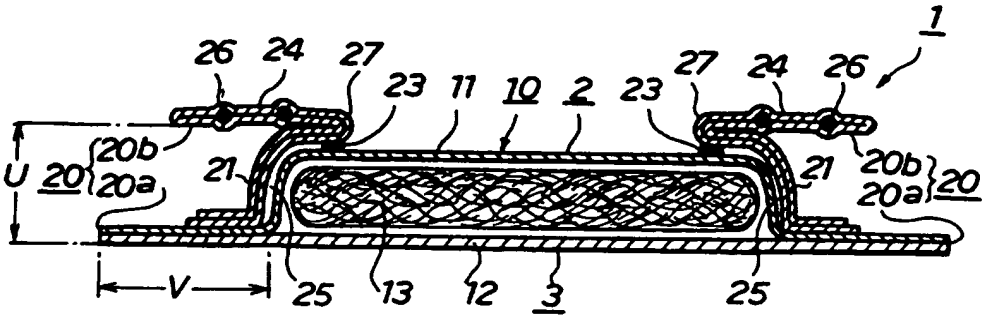

FIG. 30

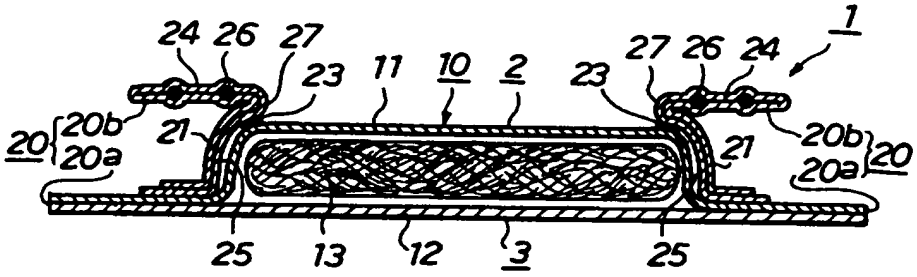

FIG. 31

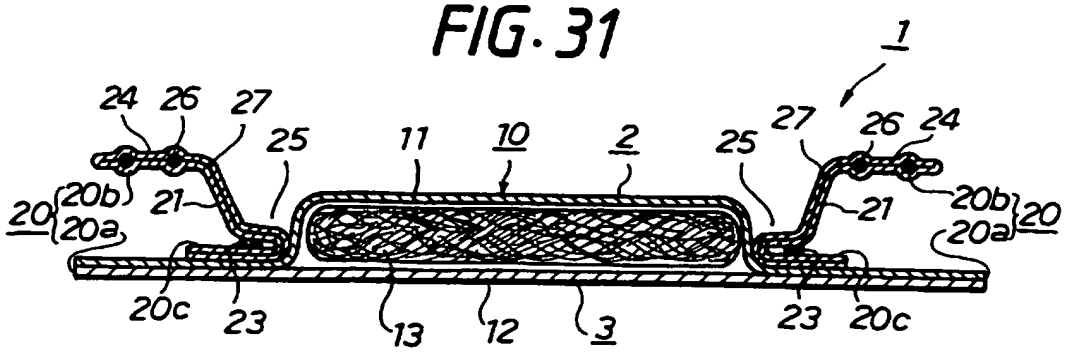

FIG. 32

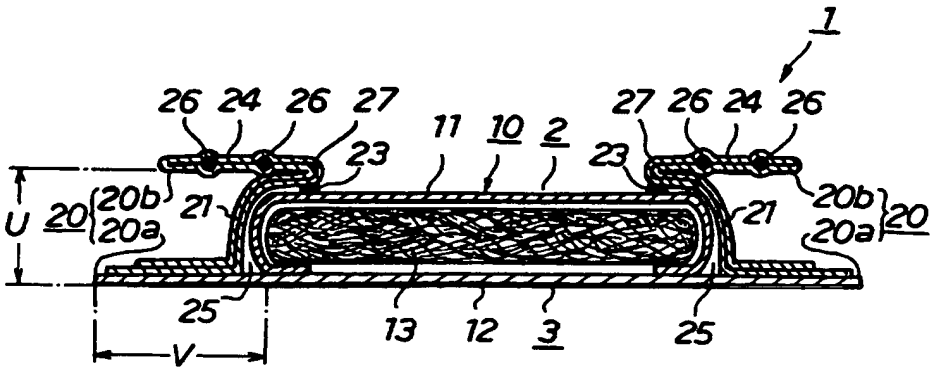
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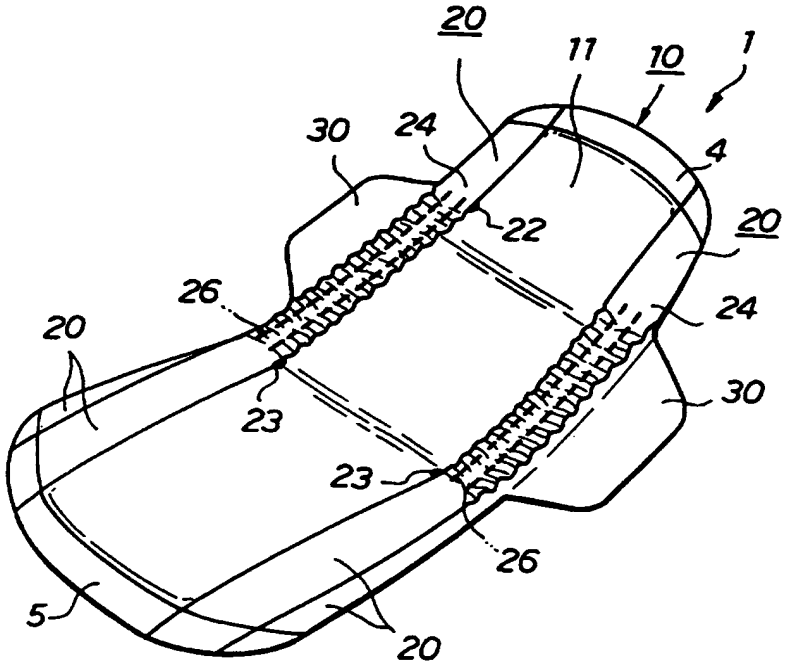
FIG. 33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This invention relates to an absorbent article, such as a sanitary napkin, which is to be worn in contact with the skin in order to absorb body fluids. This invention particularly relates to an absorbent article having good performance for preventing leakage from both of its sides.

Various absorbent articles, such as paper nappies or diapers and sanitary towels or napkins, have heretofore been proposed and used in practice. However, conventional absorbent articles have the drawback that they often cause soiling of the wearer's clothes as a result of leakage from the sides and thus cause the wearer discomfort. Therefore, various attempts have been made to eliminate this drawback.

For example, it has been proposed to form antileakage walls on opposing longitudinal sides of an absorbent article. Also, it has been proposed to shape the absorbent article so that is corresponds to the shape of the wearer's body where it is worn. Further, it has been proposed to provide elastic members located so that the absorbent article can change in shape in use. Specifically, in Japanese Utility Model Publication 60-19693, an absorbent article is proposed in which flaps formed by sealing a topsheet and a backsheet on opposing longitudinal sides are folded toward the surface of the absorbent article. Also, in Japanese Patent Publication 60-3491, an absorbent article is proposed in which flaps

formed by s aling a topshe t and a backsheet on opposing longitudinal sides are folded toward the surface of the absorbent article and are therefore folded outwardly.

Although with the conventional absorbent articles described above, provided that the central portion of an absorbent member of the absorbent article is positioned over the point of fluid discharge and that the underwear closely fits the wearer's body, leakage from the absorbent member can be reduced, it cannot be completely eliminated. In particular, in practice, the absorbent article is not always ideally positioned as described above. For example, in practice the absorbent article is often positioned so that the central portion of it is not positioned over the point of fluid discharge. Also, the absorbent article cannot adapt its shape to respond fully to movement of the wearer. so that gaps appear between the absorbent article and the wearer. In such cases, with the conventional absorbent articles described above, satisfactory leakage preventing cannot be achieved.

Further, with the conventional absorbent articles described above, front and rear ends of each of the folded flaps are adhered to front and rear end portions of the absorbent article. Therefore, the fit of the portion in use intended to contact the point of discharge is unsatisfactory, and leakage still occurs from both sides of the absorbent article.

Therefore, an object of the pres nt invention is to

provide an absorbent article, which fits th wear r well in use so that there is little risk of leakage from the sides of the absorbent article.

According to one aspect of the invention there is provided an absorbent article having a central absorbent body comprising an absorbent member between a liquid permeable topsheet which in use contacts the body of the wearer and a liquid impermeable backsheet, and lateral flaps extending from the surface of the absorbent article which in use faces away from the body of the wearer, said flaps being folded to form antileakage walls, and, outwardly of the antileakage walls, antileakage surfaces substantially parallel to the liquid permeable topsheet.

According to another aspect of the invention there is provided an absorbent article having a central absorbent body having opposed surfaces which in use respectively contact and do not contact the skin of the wearer, the central absorbent body comprising a liquid permeable topsheet, a liquid impermeable backsheet and an absorbent member interposed between the topsheet and the backsheet, and a pair of flaps at opposite sides of the central absorbent body, the absorbent article being characterised in that:

each of the flaps is connected to a surface of the absorbent article which, in use, does not contact the skin of the wearer,

the flaps form antileakage walls along sides of the

central absorbent body,

each of the flaps is folded outwardly from the central absorbent body to form an antileakage surface which antileakage surface has a portion which in use contacts the point of liquid discharge from the wearer and is substantially parallel to the skin-contacting surface of the absorbent article.

The portion of the absorbent article in accordance with the invention which contacts the point of fluid discharge from the wearer's body is a good fit in use. There is also little risk of leakage from the sides of the absorbent article. Specifically, the following effects (1) to (9) can be obtained:

(1) Side pockets are defined by the flaps and the central absorbent body. Therefore, any body fluid flowing along thew surface of the topsheet can be prevented from leaking out beyond the flaps.

(2) The antileakage surfaces can be formed at a position higher than the surface of the absorbent article which in use, contacts the skin of the wearer. Therefore, even if the absorbent member is twisted and so becomes thickened, the fit can still remain good.

(3) The antileakage surfaces spread over the skin of the wearer in use, and the flaps does not become folded over the absorbent member. Therefore, the side pockets can be formed r liably.

(4) Becaus th antileakag surfaces spread over

the skin of the wearer, the members constituting the absorbent article do not become bunched up and twisting of the absorbent member can be restricted.

(5) Leakage can be restricted by the antileakage walls and antileakage surfaces.

(6) Spreading of the flaps over the skin of the wearer can be promoted by the antileakage surfaces, the fit can be improved, and any feeling of discomfort reduced.

(7) Instead of each of the flaps being secured at the front and rear edge portions, their front and rear edge portions may be free, so as to form a substantially flat surface. In such cases, by the effects of each of the released flaps, the shape of the antileakage surface, which is substantially parallel to the skin-containing surface of the absorbent article, and the side-pocket formed by each of the antileakage walls can be formed and reliably maintained.

(8) the absorbent article may be provided with wing portions, to enable it to be firmly secured to shorts, or the like.

(9) Sine the materials constituting the absorbent article do not become bundled up together, local concentration of force does not occur in use, so that the absorbent article does not tend to twist.

The absorbent articl in accordance with the present invention is useful particularly for sanitary napkins and

disposable diapers.

Absorbent articles in the form of sanitary napkins embodying the invention will now be described in detail by way of example only and with reference to the accompanying drawings, in which:

Figure 1 is a perspective view showing a first sanitary napkin in accordance with the present invention.

Figure 2 is a schematic perspective sectional view taken along line A-A of Figure 1.

Figure 3 is a plan view showing the sanitary napkin of Figure 1.

Figure 4A is a schematic sectional view taken along line I-I of Figure 3.

Figure 4B is a schematic sectional view taken along line II-II of Figure 3.

Figure 4C is a schematic sectional view taken along line III-III of Figure 3.

Figure 4D is a schematic sectional view taken along line IV-IV of Figure 3.

figure 5 is a sectional view showing a second sanitary napkin in accordance with the present invention, the view corresponding to Figure 4C.

Figure 6 is a sectional view showing a third sanitary napkin in accordance with the present invention, the view corresponding to Figure 4C.

Figure 7 is a sectional view showing a fourth sanitary napkin in accordance with the present invention,

the vi w corresponding to Figure 4C.

Figure 8 is a sectional view showing a fifth sanitary napkin in accordance with the present invention, the view corresponding to Figure 4C.

Figure 9 is a plan view showing a sixth sanitary napkin in accordance with the present invention.

Figure 10A is a schematic sectional view taken along line I-I of Figure 9.

Figure 10E is a schematic sectional view taken along line V-V in Figure 9.

Figure 11 is a perspective view showing a seventh sanitary napkin in accordance with the invention.

Figure 12 is a schematic sectional view taken along line A-A of Figure 11.

Figure 13 is a sectional view showing an eighth sanitary napkin in accordance with the present invention, the view corresponding to Figure 12.

figure 14 is a sectional view showing a ninth sanitary napkin in accordance with the present invention, the view corresponding to Figure 12.

Figure 15 is a sectional view showing a tenth embodiment of the present invention, the view corresponding to Figure 12.

Figure 16 is a sectional view showing an eleventh embodiment of the present invention, the view corresponding to Figure 12.

Figure 17A is a sectional view showing a twelfth

embodiment of the present invention, the view corresponding to Figure 12.

Figure 17B is a sectional view showing the sanitary napkin of Figure 17A fitted to shorts.

Figure 18 is a perspective view showing another embodiment of the present invention, the view corresponding to Figure 11.

Figure 19 is a perspective view showing a thirteenth embodiment of the present invention.

Figure 20 is a schematic sectional view taken along line A-A of Figure 19.

Figure 21 is a sectional view showing the sanitary napkin of Figure 19 fitted to shorts.

Figure 22 is a sectional view showing a fourteenth embodiment of the present invention, the view corresponding to Figure 20.

Figure 23 is a sectional view showing a fifteenth embodiment of the present invention, the view corresponding to Figure 20.

Figure 24 is a perspective view showing a sixteenth embodiment of the present invention, the view corresponding to Figure 19.

Figure 25 is a perspective view showing another embodiment of the present invention.

Figure 26 is a perspective view showing an seventeenth embodiment of th present invention.

Figure 27 is a plan view showing the sanitary napkin

of Figure 26.

Figure 28 is a schematic sectional view taken along line I-I of Figure 27.

Figure 29 is a schematic sectional view taken along line II-II of Figure 27.

Figure 30 is a sectional view showing an eighteenth embodiment of the present invention, the view corresponding to Figure 29.

Figure 30 is a sectional view showing a nineteenth embodiment of the present invention, the view corresponding to Figure 29.

Figure 32 is a sectional view showing a twentieth embodiment of the present invention, the view corresponding to Figure 29, and

Figure 33 is a perspective view showing a twenty-first embodiment of the present invention, the view corresponding to Figure 26.

The first to sixth embodiments will first be described.

The first embodiment has a central absorbent body comprising a liquid permeable topsheet, a liquid impermeable backsheet and an absorbent member between the topsheet and the backsheet. A pair of flaps are provided on opposite sides of the central absorbent body. Each of the flaps is connected with that surface of the absorbent article that, in use, does not contact the skin of the w ar r. Also, each of the flaps forms an antileakage

wall along the respective side of the central absorbent body. Further, each flap is folded outwardly from the central absorbent body to form an antileakage surface. The portion of the antileakage surface which in use contacts the body of the wearer is a surface substantially parallel to the surface of the absorbent article which, in use, contacts the skin of the wearer. The antileakage walls are formed by folding each of the flaps towards the topsheet of the central absorbent body and are secured to the central absorbent body at a front portion that is forward from the portion which in use contacts the point of fluid discharge from the wearer's body, and at a rear portion that is rearward from the portion which contacts the point of discharge.

Specifically, as illustrated in Figures 1, 2, 3 and 4A to 4D, the sanitary napkin 1 has a central absorbent body 10 comprising a liquid permeable topsheet 11, a liquid impermeable backsheet and an absorbent member 13 interposed between the topsheet 11 and the backsheet 12. Also, the sanitary napkin has a pair of flaps 20, 20 on opposite sides of the central absorbent body. The structure so far described is similar to that of a conventional sanitary napkin.

In the first embodiment of the sanitary napkin 1, the topsheet 11 and the backsheet 12 extend all round b yond the absorbent member 13. The flaps 20,20 are formed by sealing the extended portions of the topsheet

11 and the backsheet 12 together. A front edge portion 4 and a rear edge portion 5 are likewise formed. The sealing together of the extended portions of the topsheet 11 and the backsheet 12 may be carried out by conventional techniques, such as heat sealing or by means of an adhesive agent.

As illustrated in Figures 2 and 4A to 4D, the absorbent member 13 is secured to the backsheet 12 by fixing agents 14, 14.

Also, slippage preventing agents 15,15 are provided on a surface 3 of the central absorbent body 10 of the sanitary napkin 1 which, in use, does not contact the skin of the wearer (hereinafter referred to as "skin-non-contacting surface"). The slippage preventing agents 15,15 serve to fix the sanitary napkin 1 to the wearer's shorts.

the topsheet 11 and the backsheet 12 may be of any of the materials conventionally employed for the purpose.

The absorbent member 13 may be of conventional materials such as pulp or highly absorbent polymers.

The absorbent member fixing agents 14,14 and the slippage preventing agents 15,15 may be of adhesive agents conventionally used in absorbent articles such as sanitary napkins.

As illustrated in Figures 1, 2 and 3, in the first embodiment of the sanitary napkin 1, each of the flaps 20,20 is joined to the skin-non-contacting surface 3 of

the sanitary napkin 1. Also, each of the flaps 20,20 is folded upwardly towards the topsheet 11 to form an antileakage wall 21 along each of the opposing longitudinal sides of the central absorbent body 10. Each of the flaps 20,20 is also folded outwardly from the central absorbent body 10 to form an antileakage surface 24. Each of the antileakage walls 21,21 is secured to the central absorbent body 10 at front and rear portions i.e. the portions of the central body 10 are respectively forward and rearward of a central portion 6 which, in use, contact the point at which the fluid is discharged from the body of the wearer. This portion will be referred to as "the contacting portion"). Specifically, the contacting portion is the portion located between the fixing points 22,22 and the fixing points 23,23 with respect to the longitudinal direction of the sanitary napkin. Also, the "front portion" means the entire portion which is formed forward of the contacting portion 6 (i.e. forward as viewed from the wearer) and includes the front edge portion 4. The term "rear portion" means the entire portion which is rearward of the contacting portion 6 (i.e. rearward as viewed from the wearer) and includes the rear edge portion 5. Each of the antileakage surfaces 24,24 in the central portion 6 is substantially parallel to the skin-non-contacting surface 2 of the central absorbent body 10.

More specifically, as illustrated in Figures 2 and

4A to 4D, the topsheet 11 covers each of the side surfaces of the absorbent member 13, and the extended portions of the topsheet 11 are sealed to the extended portions of the backsheet 12, so that the flaps 20,20 are joined to the skin-non-contacting surface 3.

Also, as illustrated in Figures 2 and 4A to 4D, the flaps 20,20 are folded upwardly to form the antileakage walls 21,21 and then outwardly from the central absorbent body 10 at a position slightly above the level of the skin-non-contacting surface 2 to form the antileakage surfaces 24,24.

As illustrated in Figures 1, 3 and 4B, in the front portion that is forward of the central portion 6, the antileakage walls 21,21 are secured to the topsheet of the central absorbent body 10 by fixing means 22,22. Also, in the rear portion that is rearward of the central portion 6, the antileakage walls 21,21 are secured to the topsheet 11by fixing means 23,23.

Fixing at the fixing points 22,22 and 23,23 may for example be achieved by means of an adhesive, or the like, ordinarily used for absorbent articles, or by heat sealing.

As illustrated in Figures 2 and 4C, since the antileakage walls 21,21 are secured to the topsheet 11 of the central absorbent body 10 as described above, side pockets 25,25 are formed between the antileakage walls 21 and the central absorbent body 10 over the contacting

portion 6, and each of the antileakage surfaces 24,24 is substantially parallel to the skin-non-contacting surface 2 of the central absorbent body 10 and slightly above the skin-non-contacting surface 2.

Further, as illustrated in Figures 1,2,3 and 4A to 4D, in the first embodiment of the sanitary napkin 1, each of the flaps 20,20 is not heat sealed at the front and rear edge portions 4 and 5 respectively. Instead, in the portion forward of the fixing points 22,22 (i.e. in the portion which in use is located on the front of the wearer) the aforesaid folding of the flap 20 is decreased gradually toward the front in such a manner that the flaps 20 become substantially flat. Similarly, in the portion rearward from the fixing points 23,23 (i.e. in the portion which is located on the back of the wearer when the sanitary napkin is being worn), the aforesaid folding of the flap 20 decreases gradually towards the rear in such a manner that the flap 20 becomes substantially flat. In cases where the flap 20 is formed in this manner, both the antileakage surface 24, which is substantially parallel to the skin-non-contacting surface 2, and the side pocket 25 can be formed and maintained reliably.

In the first embodiment of the sanitary napkin 1, the length L of the contacting portion 6 is preferably within the range of 3 to 20 cm, and more preferably 5 to 15 cm. Also, the length M of the front portion, which is

forward of the fixing points 22,22, should preferably fall within the range of 0 to 10 cm, and more preferably 2 to 8 cm. Further, the length N of the rear portion, which is rearward of the fixing points 23,23 should preferably fall within the range of 3 to 25 cm, and 5 to 18cm.

The width S of each antileakage surface 24 at the contacting portion 6 (shown in Figure 3) should preferably fall within the range of 0.5 to 4 cm, and more preferably 0.7 to 2.5 cm. If the width S of each antileakage surface 24 is less than 0.5 cm, the antileakage wall 21 may collapse so that the side pocket 25 will not be formed. If the width S of each antileakage surface 24 is larger than 4cm, the flat antileakage surface 24 may not be maintained and leakage may be permitted.

The height U of the antileakage surface 24, as measured from the skin-non-contacting surface 3, (shown in Figure 2) should preferably be at most 40 mm, and should more preferably fall within the range of 5 to 25 mm.

The width T between the antileakage surfaces 24,24 in the contacting portion 6 (shown in Figure 3) should preferably be at least 30 mm so that the antileakage surfaces 2,24 may not cover the skin-non-contacting surfac 2 of th central absorb nt body 10.

With th first embodiment of the sanitary napkin 1

having th structure described above, the antileakage surfaces 24,24 can fit well against the skin of the wearer, and leakage from the sides can be substantially prevented. Specifically, any discharged liquid flowing along the surface of the topsheet 11 runs into the side pockets 25,25 and is thereafter absorbed by the absorbent member 13 by contact with the side surfaces of the central absorbent body 10.

Furthermore, the sanitary napkin 1 is provided with elastic members 26,25 which are located in each of the antileakage surfaces 24,24 in the contacting portion 6.

By the provision of the elastic members 26,26, both the desired shape of the antileakage wall 21 and the shape of the antileakage surface 24, which is substantially parallel to the skin-non-contacting surface 2 of the central absorbent body 10 can be maintained. Also, the fit to the wearer's body can be improved. Further, since the elastic members 26,26 are provided in the antileakage surface 24 (on the side outward from folding line 27 shown in Figure 2), the size of the side pockets 25 can be maintained, and therefore leakage at the sides substantially prevented.

For the elastic members 26, any elastic materials ordinarily used for absorbent articles may be employed. Examples of particularly preferred materials include foamed polyolefins and polyurethanes, and natural rubber. The elastic member 26 may take on various forms. For

exampl , it may tak the form of a thr ad, film, or sheet. In this embodiment thread-shaped elastic members are employed. Also, there may be any number of elastic members 26,26 ..... However, in cases where the elastic members 26,26 ..... are in the form of threads, from the viewpoint of shape maintenance and leak prevention, it is preferable to provide at least two elastic members 26, 26 on each side.

Further, the elastic member or members 26 should preferably exert such an elastic force that the stress at 20% elongation of each flap 20 may be at least 100 g.

the second, third, fourth and fifth embodiments of the absorbent article in accordance with the present invention will be described hereinbelow with reference to Figures 5, 6, 7 and 8 respectively.

For the second, third, fourth and fifth embodiments, only the features different from the first embodiment will be described. In Figures 5 to 8, the same elements as in Fig.4C have the same reference numerals.

As illustrated in Figure 5, in the second embodiment of the sanitary towel 1, each of the flaps 20,20 is formed by the topsheet 11. Specifically, the topsheet 11 is joined to the backsheet 12 on the side of the skin-non-contacting surface 3, and each edge of the opposing longitudinal sides of the topsheet 11 is extended outwardly to form the flap 20. In this manner, the flap 20 is connected to the skin-non-contacting surface 3.

As in the flap 20 in the first embodiment described above, the flap 20 forms an antileakage wall 21 and the antileakage surface 24. The flap 20 is folded at the side edge of the antileakage surface 24 toward the skin-non-contacting surface 3. The elastic members 26,26 are held between the antileakage surface 24 and the folded portion of the flap 20.

In this case, it is necessary for the topsheet 11, which forms the flap 20, to be waterproof. Examples of the materials for the topsheet 11 capable of being used in this case include a material obtained by carrying out a water-repellent treatment on the flap-forming portions of an ordinarily used topsheet material, a plastic sheet in which the absorbent member-contacting portion is porous and the flap-forming portions are not porous, and a nonwoven fabric in which the flap-forming portions have been subjected to a laminating process.

As illustrated in Figure 6, in the third embodiment of the sanitary napkin 1, the flaps 20,20 are formed by the backsheet 12. The backsheet 12 is joined to the topsheet at the sides of the skin-non-contacting surface 3, and the sides of the backsheet 12 are extended outwardly to form the flaps 20. In this manner, the flaps 20 are connected to the skin-non-contacting surface 3.

As in the flap 20 in the first embodiment d scribed above, the flap 20 forms the antileakage wall 21 and an

antileakage surface 24. The flap 20 is folded at the side edge of the antileakage surface 24 toward the skin-non-contacting surface 3. The elastic members 26,26 are held between the antileakage surface 24 and the folded portion of the flap 20.

As illustrated in Figure 7, in the fourth embodiment of the sanitary napkin 1, the flaps 20,20 are formed respectively by sheets 40,40 additional to the topsheet 11 and the backsheet 12.

The additional sheets 40,40 may be sheets that have been subjected to a waterproofing treatment, a liquid impermeable sheet, or the like, may be employed.

As an example of a sheet subjected to waterproofing treatment, a nonwoven fabric treated with a water-repellent oil agent may be mentioned. As examples of liquid impermeable sheets, plastic sheets, such as polyethylene or polypropylene sheets, or sheets obtained by laminating a nonwoven fabric, may be mentioned.

Specifically, the topsheet 11 covers the opposing longitudinal side surfaces of the absorbent member 13 up to the edges of the opposing longitudinal sides at the skin-non-contacting surface 3. At the skin-non-contacting surface 3, the edge portion of the other sheet 40 is held and secured between the topsheet 11 and the backsheet 12. In this manner, the flap 20 is connected with the skin-non-contacting surface 3.

As in the flap 20 in the first embodiment described

above,th flap 20 forms th antileakage wall 21 and the antileakage surface 24. The flap 20 is folded at the side edge of the antileakage surface 24 toward the skin-non-contacting surface 3. The elastic members 26,26 are held between the antileakage surface 24 and the folded portion of the flap 20.

As illustrated in Figure 8, in the fifth embodiment of the sanitary napkin 1, the flaps 20,20 are formed by a single sheet 40 additional to the topsheet 11 and the backsheet 12. Also, wing portions 30,30 which have adhesive portions 31,31 for attachment to the underwear of the user are provided at the skin-non-contacting surface 3.

Specifically, the topsheet 11 covers the opposing longitudinal side surfaces of the absorbent member 13 up to the edges of the opposing longitudinal sides at the skin-non-contacting surface 3. At the skin-non-contacting surface 3, the additional sheet 40 is held and secured between the topsheet 11 and the backsheet 12. In this manner, the flap 20 is connected with the skin-non-contacting surface 3.

As in the first embodiment described above, the flap 20 forms the antileakage wall 21 and the antileakage surface 24. The flap 20 is folded at the side edge of the antileakage surface 24 toward the skin-non-contacting surface 3. The elastic members 26,26 are held between the antileakag surfac 24 and the fold d portion

of the flap 20.

The wing portions 30,30 are formed by extended side portions of the backsheet 12, which portions extend outwardly from the absorbent member 13. The adhesive portions 31,31 are formed by applying an adhesive agent to the surfaces of the wing portions 30,30 at the skin-non-contacting surface3. Any conventional adhesive agents may be employed. The surface of the portion of the backsheet 12, which portion is adhered to the central absorbent body 10 (i.e. the non-adhered surface) has been subjected to peal treatment. Therefore, before the sanitary napkin 1 is used (i.e. when it is being stored), the wing portion 30 can be folded back onto the skin-non-contacting surface 3 and releasably adhered to the surface of the backsheet 12 in order to protect the adhesive portion 31.

With the second, third, fourth and fifth embodiments described above, the same beneficial effects as those described in relation to the first embodiment can be obtained.

The sixth embodiment of the absorbent article in accordance with the present invention will be described hereinbelow with reference to Figure 9, 10A and 10E.

Only the features different from the first embodiment will be described.

As illustrated in Figures 9 and 10A, in the sixth embodiment of the sanitary napkin 1, at the front end 4

of the sanitary napkin 1, the flap 20 is kept in the folded condition and is heat sealed in this condition to the antileakage surface 24 facing up. Also, as illustrated in Figures 9 and 10E, at the rear end 5, the flap 20 is substantially flat. This embodiment of the sanitary napkin 1 is formed so that, in the portion forward from the fixing portions 22,22 (i.e. the portion which in use is located to the front of the wearer) the side pocket is formed over the entire area in which the central absorbent body 10 and the flap 20 contact each other. Also, this embodiment of the sanitary napkin 1 is constituted in such a manner that, in the portion rearward from the fixing portions 23,23 (i.e. in the portion which in use is located to the rear of the wearer), the aforesaid folded condition of the flap 20 is decreased gradually towards the back in such a manner that the flap 20 becomes substantially flat.

the sixth embodiment of the sanitary napkin 1 has the structure described above. Therefore, in particular, leakage from the sides and back can be substantially prevented. Accordingly, this embodiment is suitable particularly for night use and for long-time use.

A seventh embodiment of the absorbent article in accordance with the present invention will be described hereinbelow with reference to Figures 11 and 12.

Only the features different from the first embodiment will be described.

Wing portions for fixing th absorb nt article in place are provided in such a manner that the wing portions are connected with the surface of the absorbent article that does not contact the skin of the wearer, at the sides of the central absorbent body.

Thus, wing portions 30,30 are formed by adhering a rectangular sheet 32 to the surface of the backsheet 12 so as to extend outwardly from the sides of the central absorbent body 10. Each of the wing portions 30,30 is provided with an adhesive portion 31 on the skin-non-contacting surface 3.

As the rectangular sheet 32, it is possible to employ a plastic sheet, such as polyethylene sheet or a polyethylene terephthalate (PET) sheet, or paper or a nonwoven fabric which has been subjected to a laminating process. Each of the adhesive portions 31,31 is formed by applying an adhesive agent to the surface of each of the wing portions 30,30 at the skin-non-contacting surface 3. As the adhesive agent, any conventional adhesive agents may be employed.

Using the wing portions 30,30 the sanitary napkin 1 can be secured more firmly to the user's underwear.

The eighth to twelfth embodiments of the absorbent article in accordance with the present invention will be described hereinbelow with reference to Figures 13 to 17B.

Only the features different from the aforesaid

seventh embodiment will be describ d.

As illustrated in Figure 13, in the eighth embodiment, the flaps 20,20 are formed by sheets 40,40 additional to the topsheet 11 and the backsheet 12. Also, the wing portions 30,30 are formed by portions of the backsheet 12 extending laterally outwardly from the absorbent member 13. These extended portions correspond to the contacting portion 6.

The sheets 40,40 are the same as in the fourth embodiment.

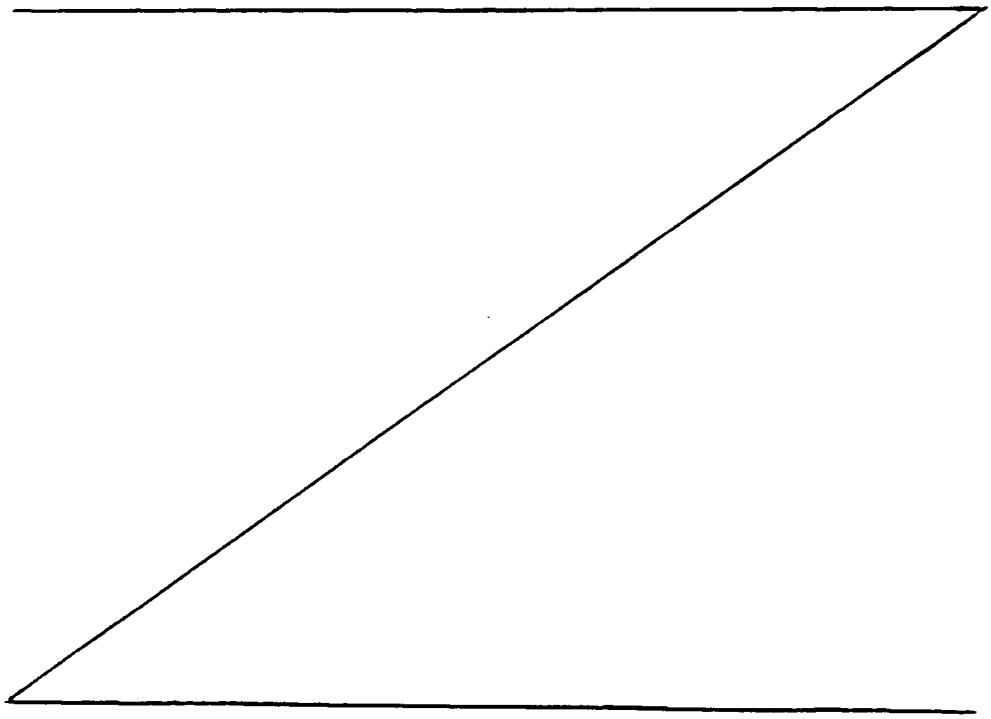
Specifically, in the eighth embodiment of the sanitary napkin 1, the topsheet 11 covers the opposing longitudinal sides of the absorbent member 13 as far as the edges thereof at the skin-non-contacting surface 3. At the skin-non-contacting surface 3, sheets 40,40 are held between the topsheet 11 and the backsheet 12. In this manner, the flap 20 is connected to the skin-non-contacting surface 3.

As in the flaps 20 in the seventh embodiment described above, the flaps 20 form the antileakage wall 21 and the antileakage surface 24. The flaps 20 are folded at the side of the antileakage surface 24 toward the skin-non-contacting surface 3. The elastic members 26,26 are held between the antileakage surface 24 and the folded portion of the flap 20.

As illustrated in Figur 14, in the ninth embodiment of the sanitary napkin 1, the flaps 20,20 ar formed by

the topsheet 11. Also, each of the wing portions 30,30 is formed by extended portions of opposite sides of the backsheet 12, which portions extend outwardly from the sides of the absorbent member 13. The extended portions correspond to the contacting portion 6.

Specifically, the topsheet 11 covers the opposing longitudinal side surfaces of the absorbent member 13, and each of the opposing longitudinal side edges of the topsheet 11 is extended outwardly. In this manner, the flap 20 is connected with the skin-non-contacting surface 3. Also, at the skin-non-contacting surface 3 of the absorbent member 13, the end portions of the topsheet 11 are held and secured between the absorbent member 13 and the backsheet 12.



As in the flap 20 in the seventh embodiment described above, the flap 20 forms the antileakage wall 21 and the antileakage surface 24. The flap 20 is folded at the side edge of the antileakage surface 24 toward the skin-uncontacting surface 3. The elastic members 26, 26 are held between the antileakage surface 24 and the folded portion of the flap 20.

In this case, it is necessary for the topsheet 11, which forms the flap 20, to have waterproofness. As the material for the topsheet 11 capable of being used in this case, any of various materials described above for the second embodiment may be employed.

As illustrated in Figure 15, in the tenth embodiment of the sanitary napkin 1, the flaps 20, 20 are formed by the topsheet 11 and the backsheet 12. Also, each of the wing portions 30, 30 is formed by the backsheet 12. Specifically, each of the wing portions 30, 30 is formed by each of extended portions of the opposing lateral side edges of the backsheet 12, which portion is extended outwardly from each edge of the opposing longitudinal sides of the absorbent member 13. The extended portions correspond to the contacting portion 6. Further, the backsheet 12 is then folded

toward the topsheet 11 and sealed with the topsheet 11 to form each of the flaps 20, 20 as in the aforesaid seventh embodiment. Each of the flaps 20, 20 forms the antileakage wall 21 and the antileakage surface 24.

In this sanitary napkin 1, the entire flap 20 is formed by the backsheet 12 and the topsheet 11. The flap 20 and the wing portion 30 can be formed by extending the backsheet 12 over its entire longitudinal side, folding the backsheet 12, sealing the backsheet 12 with the topsheet 11 to form the flap 20 over the entire side of the central absorbent body 10, thereafter folding the backsheet 12, and cutting the two-ply folded portions in accordance with the desired shape of the wing portion 30 to form the wing portion 30.

As illustrated in Figure 16, in the eleventh embodiment of the sanitary napkin 1, each of the wing portions 30, 30 is formed by each of two sheets 32, 32', which are overlaid upon the opposing longitudinal sides of the skin-uncontacting surface 3. The other features are the same as those of the seventh embodiment described above.

As illustrated in Figure 17A, in the twelfth embodiment of the sanitary napkin 1, each of the wing portions 30, 30 is secured to the corresponding flap 20 at a position slightly upper than the level of the

skin-uncontacting surface 3 by each of adhering portions 33, 33, which are formed by applying an adhesive agent along the longitudinal direction of the central absorbent body 10. The other features are the same as those of the seventh embodiment described above.

The position slightly upper than the level of the skin-uncontacting surface 3 should preferably be such that the position is upper than the level of the skin-uncontacting surface 3 and lower than the level of the antileakage surface 24, and such that the antileakage surface 24 does not become lower than the level of the skin-contacting surface 2 when the sanitary napkin 1 is fitted to shorts in use and the side pocket 25 is formed.

Since the twelfth embodiment of the sanitary napkin 1 is constructed in the manner described above, when the sanitary napkin 1 in use is fitted to shorts 50 as shown in Figure 17B, larger side pockets 25, 25 can be formed. Therefore, leakage on both sides can be prevented more effectively.

With the eighth through twelfth embodiments described above, the same effects as those with the aforesaid seventh embodiment can be obtained.

A thirteenth embodiment of the absorbent article in accordance with the present invention will

be described hereinbelow with reference to Figures 19, 20, and 21.

Figure 19 is a perspective view showing the thirteenth embodiment of the absorbent article in accordance with the present invention, which is constituted as a sanitary napkin. Figure 20 is a schematic sectional view taken along line A-A of Figure 19. Figure 21 is a sectional view showing the sanitary napkin of Figure 19 fitted to shorts.

As for the thirteenth embodiment, only the features different from the first embodiment will be described hereinbelow. As for the features which are not explained in the thirteenth embodiment, the explanation made in the first embodiment is applied. In Figures 19, 20, and 21, the same elements as in Figure 1 are numbered with the same reference numerals.

In the thirteenth embodiment of the sanitary napkin 1, each of the wing portions for fixing the absorbent article in use is formed by extending the antileakage surface in the aforesaid first embodiment of the sanitary napkin 1.

Specifically, each of the wing portions 30, 30 is formed by each of extended portions of the opposing lateral side edges of the topsheet 11 and the backsheet 12 at the antileakage surfaces 24, 24, which

portion is extended outwardly from each edge of the opposing longitudinal sides of the absorbent member 13. Each of the wing portions 30, 30 is provided with the adhesive portion 31 on the side facing the skin-uncontacting surface 3. The adhesive portion 31 is formed by applying an adhesive agent. As the adhesive agent, any of known adhesive agents may be employed.

In the thirteenth embodiment of the sanitary napkin 1, the length of each wing portion 30, as measured along the width direction of the sanitary napkin 1, should preferably fall within the range of 10 to 100 mm, and should more preferably fall within the range of 20 to 80 mm.

Since the thirteenth embodiment of the sanitary napkin 1 is provided with the wing portions 30, 30, the antileakage wall 21 and the antileakage surface 24 can be formed in a stable manner.

As illustrated in Figure 21, when the sanitary napkin 1 is used, the wing portions 30, 30 are folded toward the shorts 50, and the adhesive portions 31, 31 are adhered to the surface of the shorts 50. In this manner, the sanitary napkin 1 can be secured firmly and can be prevented from slipping off during the use. Also, with this embodiment of the sanitary napkin 1 having the structure described above, when it

is used, the side pockets 25, 25 larger than those in a sanitary napkin having no wing portion 30 can be formed, and leakage on both sides can be prevented more effectively.

Fourteenth, fifteenth, and sixteenth embodiments of the absorbent article in accordance with the present invention will be described hereinbelow with reference to Figures 22, 23, and 24.

Figure 22 is a sectional view showing the fourteenth embodiment of the absorbent article in accordance with the present invention, which is constituted as a sanitary napkin, the view corresponding to Figure 20. Figure 23 is a sectional view showing the fifteenth embodiment of the absorbent article in accordance with the present invention, which is constituted as a sanitary napkin, the view corresponding to Figure 20. Figure 24 is a perspective view showing the sixteenth embodiment of the absorbent article in accordance with the present invention, which is constituted as a sanitary napkin, the view corresponding to Figure 19.

As for the fourteenth, fifteenth, and sixteenth embodiments, only the features different from the aforesaid thirteenth embodiment will be described hereinbelow. As for the features which are not ex-

plained in the fourteenth, fifteenth, and sixteenth embodiments, the explanation made in the first and thirteenth embodiments is applied. In Figures 22, 23, and 24, the same elements as in Figures 19 and 20 are numbered with the same reference numerals.

As illustrated in Figure 22, in the fourteenth embodiment of the sanitary napkin 1, the flaps 20, 20 are formed by sheets 40, 40 other than the topsheet 11 and the backsheet 12.

As for the other sheets 40, 40, the explanation described for the aforesaid fourth embodiment is applied.

Specifically, in the fourteenth embodiment of the sanitary napkin 1, the topsheet 11 covers the opposing longitudinal side surfaces of the absorbent member 13 up to the edges of the opposing longitudinal sides at the skin-uncontacting surface 3. At the skin-uncontacting surface 3, each of the other sheets 40, 40 is held and secured between the topsheet 11 and the backsheet 12. In this manner, the flap 20 is connected with the skin-uncontacting surface 3.

As in the flap 20 in the thirteenth embodiment described above, the flap 20 forms the antileakage wall 21, the antileakage surface 24, and the wing portion 30. The flap 20 is folded at the side edge of

the antileakage surface 24 and the side edge of the wing portion 30 toward the skin-uncontacting surface 3. The elastic members 26, 26 are held between the anti-leakage surface 24 and the folded portion of the flap 20.

As illustrated in Figure 23, in the fifteenth embodiment of the sanitary napkin 1, each of the flaps 20, 20 and each of the wing portions 30, 30 are formed by the backsheet 12. Specifically, the backsheet 12 is joined with the topsheet 11 on the side of the skin-uncontacting surface 3, and each edge of the opposing longitudinal sides of the backsheet 12 is extended outwardly to form the flap 20. In this manner, the flap 20 is connected with the skin-uncontacting surface 3.

Further, in the contacting portion 6, the flap 20 is extended outwardly to form the wing portion 30.

The elastic members 26, 26 are secured to the flap 20 at the antileakage surface 24 by an adhesive agent or by being covered with a thermoplastic resin, or the like, and subjected to heat treatment.

As illustrated in Figure 24, in the sixteenth embodiment of the sanitary napkin 1, each of the flaps 20, 20 is extended outwardly in the portion forward

from the contacting portion 6, and each of the wing portions 30, 30 is formed in the portion forward from the contacting portion 6.

Thus in the absorbent article in accordance with the present invention, no limitation is imposed on the position, at which each of the wing portions is located.

With the fourteenth, fifteenth, and sixteenth embodiments described above, the same effects as those with the thirteenth embodiment can be obtained.

Seventeenth through twenty-first embodiments of the absorbent article in accordance with the present invention will be described hereinbelow with reference to Figures 26 through 33.

Figure 26 is a perspective view showing the seventeenth embodiment of the absorbent article in accordance with the present invention, which is constituted as a sanitary napkin. Figure 27 is a plan view showing the sanitary napkin of Figure 26. Figure 28 is a schematic sectional view taken along line I-I of Figure 27. Figure 29 is a schematic sectional view taken along line II-II of Figure 27.

As for the seventeenth embodiment, only the features different from the aforesaid first embodiment will be described hereinbelow. As for the features

which are not explained in the seventeenth embodiment, the explanation made for the aforesaid first embodiment is applied. In Figures 26, 27, 28 and 29, the same elements as in Figures 1, 3, and 4A through 4D are numbered with the same reference numerals.

The seventeenth embodiment of the sanitary napkin has a central absorbent body comprising a liquid permeable topsheet, a liquid impermeable backsheet and an absorbent member interposed between the topsheet and the backsheet. Also, the sanitary napkin has a pair of flaps provided in the opposing longitudinal sides of the central absorbent body. Each of the flaps is connected with the surface of the absorbent article which, in use, does not contact the skin of the wearer. Also, each of the flaps forms an antileakage wall along each edge of the opposing longitudinal sides of the central absorbent body. Further, each of the flaps is folded outwardly from the central absorbent body to form an antileakage surface. The antileakage surface in the portion which contacts the discharging portion of the wearer in use is a surface substantially parallel to the surface of the absorbent article which, in use, contacts the skin of the wearer. The flap comprises a first flap and a second flap. The e folded portion of the flap 20.

As illustrated in Figure 23, in the fifteenth em first flap is formed by at least an extended portion of the backsheet. The second flap is formed by an antileakage sheet. The lower portion of the second flap is secured to the first flap. The antileakage wall and the antileakage surface are formed by the second flap.

Specifically, as illustrated in Figures 26 and 27, the seventeenth embodiment of the sanitary napkin 1 has a central absorbent body 10 comprising a liquid permeable topsheet 11, a liquid impermeable backsheet 12 and an absorbent member 13 interposed between the topsheet 11 and the backsheet 12. Also, the sanitary napkin has a pair of flaps 20, 20 provided in the opposing longitudinal sides of the central absorbent body. Such a structure is similar to the structure of an ordinary sanitary napkin.

As illustrated in Figures 26, 27, 28, and 29, in the seventeenth embodiment of the sanitary napkin 1, each of the flaps 20, 20 comprises a first flap 20a, which is formed by an extended portion of the topsheet 11 and an extended portion of the backsheet 12, and a second flap 20b formed by the antileakage sheet. The lower portion of the second flap 20b is secured to the first flap 20a. Also, the second flap 20b forms the

antileakage wall 21 along each edge of the opposing longitudinal sides of the central absorbent body 10. Further, the second flap 20b is folded outwardly from the central absorbent body 10 to form the antileakage surface 24. The antileakage surface 24 in the contacting portion 6 is a surface substantially parallel to the skin-contacting surface 2.

More specifically, as illustrated in Figures 26, 28, and 29, the first flap 20a is formed by extending the topsheet 11 and the backsheet 12 outwardly from each edge of the opposing longitudinal sides of the central absorbent body 10 and adhering the extended portion of the topsheet 11 and the extended portion of the backsheet 12 to each other. The extended portion of the topsheet 11 and the extended portion of the backsheet 12 are adhered to each other by a heat sealing process, by an adhesive agent, or the like.

The lower portion of the second flap 20b is secured by the heat sealing process, or the like, to the side edge of the first flap 20a along the longitudinal direction of the first flap 20a. The second flap 20b is folded upwardly at the side edge of the central absorbent body 10 to form the antileakage wall 21. Further, at a position slightly upper than the level of the skin-contacting surface 2 of the sanitary napkin 1,

the second flap 20b is folded outwardly from the central absorbent body 10 to form the antileakage surface 24.

Also, as illustrated in Figures 26, 28, and 29, in the seventeenth embodiment of the sanitary napkin 1, in the front edge portion 4 and the rear edge portion 5 of the sanitary napkin 1, the folded flap 20 is kept in the folded condition, is heat sealed in this condition with the antileakage surface 24 facing up, and is thus secured.

Therefore, the shape of the flap 20 in the contacting portion 6 can be kept appropriately. Further, the side pocket 25 can be formed in a stable manner over the entire area of the portion, in which the central absorbent body 10 and the flap 20 contact with each other.

As the antileakage sheet, a sheet having been subjected to waterproof treatment, a liquid impermeable sheet, or the like, may be employed.

As an example of the sheet having been subjected to waterproof treatment, a nonwoven fabric treated with a water repellent oil agent, or the like, may be mentioned. As examples of the liquid impermeable sheet, a plastic sheet, such as a polyethylene sheet or a polypropylene sheet, a sheet obtained by

carrying out a laminating process on a nonwoven fabric, and the like, may be mentioned.

The width V of each first flap 20a (shown in Figure 29) should preferably fall within the range of 3 to 100 mm, and should more preferably fall within the range of 5 to 60 mm.

With the seventeenth embodiment of the sanitary napkin 1 having the structure described above, the antileakage surfaces 24, 24 can appropriately fit to the skin of the wearer, and leakage on both sides can be prevented effectively. Specifically, since the side pockets 25, 25 are formed, a discharged liquid flowing along the surface of the topsheet 11 flows into the side pockets 25, 25 and is thereafter absorbed by the absorbent member 13 from the side surfaces of the central absorbent body 10. Therefore, leakage on both sides can be prevented effectively. Also, the folding of the second flap 20b onto the absorbent member 13 can be carried out easily, and therefore the productivity can be kept high.

The eighteenth through twenty-first embodiments of the absorbent article in accordance with the present invention will be described hereinbelow with reference to Figures 30, 31, 32, and 33.

Figure 30 is a sectional view showing the

eighteenth embodiment of the absorbent article in accordance with the present invention, which is constituted as a sanitary napkin, the view corresponding to Figure 29. Figure 31 is a sectional view showing the nineteenth embodiment of the absorbent article in accordance with the present invention, which is constituted as a sanitary napkin, the view corresponding to Figure 29. Figure 32 is a sectional view showing the twentieth embodiment of the absorbent article in accordance with the present invention, which is constituted as a sanitary napkin, the view corresponding to Figure 29. Figure 33 is a perspective view showing the twenty-first embodiment of the absorbent article in accordance with the present invention, which is constituted as a sanitary napkin, the view corresponding to Figure 26.

As for the eighteenth through twenty-first embodiments, only the features different from the aforesaid seventeenth embodiment will be described hereinbelow. As for the features which are not explained in the eighteenth through twenty-first embodiments, the explanation made for the aforesaid seventeenth embodiment is applied. In Figures 30, 31, 32, and 33, the same elements as in Figures 26 and 29 are numbered with the same reference numerals.

As illustrated in Figure 30, in the eighteenth embodiment of the sanitary napkin 1, at the fixing portion 22, which is located in the front portion that is forward from the contacting portion 6, and at the fixing portion 23, which is located in the rear portion that is rearward from the contacting portion 6, the antileakage wall 21 is secured to the central absorbent body 10 at the side edge portions of the skin-contacting surface 2, i.e., to the vicinity of the side of the central absorbent body 10 at the skin-contacting surface 2.

As illustrated in Figure 31, in the nineteenth embodiment of the sanitary napkin 1, at the fixing portion 22, which is located in the front portion that is forward from the contacting portion 6, and at the fixing portion 23, which is located in the rear portion that is rearward from the contacting portion 6, the antileakage wall 21 is secured to the surface formed by securing the lower portion of the second flap 20b to the first flap 20a. The side pocket 25 is thereby formed along each of the opposing longitudinal sides of the central absorbent body.

Since the nineteenth embodiment of the sanitary napkin 1 is constructed in the manner described above, larger side pockets 25, 25 can be formed.

Therefore, the effects of preventing leakage on both sides can be enhanced.

As illustrated in Figure 32, in the twentieth embodiment of the sanitary napkin 1, the first flap 20a is formed by only the extended portion of the backsheet 12.

Also, the topsheet 11 covers the side surfaces of the absorbent member 13 and the peripheral portion of the lower surface of the absorbent member 13 and is sealed with the backsheet 12 at the central absorbent body 10.

As illustrated in Figure 33, in the twenty-first embodiment of the sanitary napkin 1, wing portions 30, 30, which have adhesive portions (not shown) for adhering to the underwear when the sanitary napkin 1 is used, are provided at the skin-uncontacting surface 3.

Each of the wing portions 30, 30 is formed by each of extended portions of the opposing lateral side edges of the first flaps 20a, 20a, which portion is extended outwardly from each edge of the opposing longitudinal sides of the central absorbent body 10 and corresponds to the contacting portion 6. Each of the adhesive portions is formed by applying an adhesive agent to each of the wing portions 30, 30 on the side

of the skin-uncontacting surface 3. As the adhesive agent, any of known adhesive agents may be employed.

With the eighteenth through twenty-first embodiments, the same effects as those with the aforesaid seventeenth embodiment can be obtained.

The absorbent article in accordance with the present invention is not limited to the first through twenty-first embodiments described above and may be embodied in various other ways. For example, the constitutions described below may be employed.

Specifically, in the aforesaid embodiments of the sanitary napkin 1, in the front edge portion 4 and the rear edge portion 5 of the sanitary napkin 1, the folded flap 20 may be kept in the folded condition, may be heat sealed in this condition with the antileakage surface 24 facing up, and may thus be secured.

In this manner, the shape of the flap 20 in the contacting portion 6 can be kept appropriately. Further, the side pocket 25 can be formed in a stable manner over the entire area of the portion, in which the central absorbent body 10 and the flap 20 contact with each other.

As described above, in the front edge portion 4 and the rear edge portion 5 of the sanitary napkin 1, the folded flap 20 may be kept in the folded condition,

may be heat sealed in this condition with the antileakage surface 24 facing up, and may thus be secured. In such cases, the fixing at the fixing portions 22, 22 in the front portion and the fixing at the fixing portions 23, 23 in the rear portion need not necessarily be carried out.

Also, in the embodiments described above, the antileakage wall 21 is secured to the topsheet 11 on the surface (i.e., the skin-contacting surface 2) of the central absorbent body 10. However, the present invention is not limited to such a constitution. For example, the antileakage wall 21 may be secured to the topsheet 11 at a side of the central absorbent body 10.

Further, in the embodiments described above, the antileakage wall 21 is secured to the central absorbent body 10 by the point-like fixing portions 22, 22, 23, 23. Alternatively, the antileakage wall 21 may be secured to the central absorbent body 10 by linear fixing portions (extending along the longitudinal direction of the absorbent article). In such cases, as in the fixing by the point-like fixing portions 22, 22, 23, 23, the fixing by the linear fixing portions may be carried out by using an adhesive agent, a heat sealing process, or the like. The lengths of the linear fixing portions may be selected arbitrarily. Also, at least

either one of the linear fixing portions, which are formed in the front portion that is forward from the contacting portion 6, may not extend up to the front edge portion 4, and/or at least either one of the linear fixing portions, which are formed in the rear portion that is rearward from the contacting portion 6, may not extend up to the rear edge portion 5.

Furthermore, in the embodiments described above, the wing portions 30, 30 are formed at the positions corresponding to the contacting portion 6. However, no limitation is imposed on the positions of the wing portions 30, 30. For example, the positions of the wing portions 30, 30 may be shifted forwardly or rearwardly.

Moreover, the positions, at which the elastic members 26, 26 are located, are not limited to those in the embodiments described above. For example, the elastic members may be provided over the entire longitudinal area of the antileakage surface 24. Alternatively, the positions of the elastic members may be shifted forwardly or rearwardly.

Also, in the seventh through sixteenth embodiments described above, the constitutions described below may be employed.

Specifically, as illustrated in Figure 18, in

the front edge portion 4 of the sanitary napkin 1, the folded flap 20 may be kept in the folded condition, may be heat sealed in this condition with the antileakage surface 24 facing up, and may thus be secured.

In this manner, the shape of the flap 20 in the contacting portion 6 can be kept appropriately. Further, the side pocket 25 can be formed in a stable manner over the entire area of the portion, in which the central absorbent body 10 and the flap 20 contact with each other.

In such cases, the fixing at the fixing portions 22, 22 in the front portion need not necessarily be carried out.

In the seventh embodiment shown in Figures 11 and 12, it is also possible to form the flap 20 by the backsheet 12 alone.

Also, in cases other than the cases where the wing portion 30 is combined with the backsheet 12 into an integral body as in the aforesaid eighth, ninth, and tenth embodiments shown in Figures 13, 14, and 15, the material for forming the wing portion 30 need not necessarily be impermeable to liquids. In such cases, the wing portion 30 may be constituted of a liquid permeable material, such as an ordinary nonwoven fabric or paper.

Further, in the sanitary napkins shown in Figures 13 and 14, in which the wing portion 30 is formed by the backsheet 12, it is possible to employ a backsheet formed by locating, at predetermined positions, a backsheet member for forming the backsheet portion located at the forward portion of the central absorbent body 10, a backsheet member for forming the backsheet portion located at the portion for forming the wing portion 30, and a backsheet member for forming the backsheet portion located at the rearward portion of the central absorbent body 10.

Furthermore, in the aforesaid thirteenth embodiment shown in Figures 19, 20, and 21, the flap 20 and the wing portion 30 are formed by the extended portion of the topsheet 11 and the extended portion of the backsheet 12. Alternatively, the flap 20 and the wing portion 30 may be formed by only either one of the extended portion of the topsheet 11 and the extended portion of the backsheet 12. In cases where the flap 20 and the wing portion 30 are formed by only the extended portion of the topsheet 11, when a nonwoven fabric is used as the topsheet 11, a nonwoven fabric, in which the portion for forming the flap 20 and the wing portion 30 has been subjected to a waterproof process, should preferably be employed. When a porous

film is used as the topsheet 11, a porous film, in which the portion for forming the flap 20 and the wing portion 30 has no pore, should preferably be employed.

Also, in the aforesaid seventeenth embodiment shown in Figures 26, 27, 28, and 29, the constitutions described below may be employed.

Specifically, each of the flaps 20, 20 may not be secured in the front edge portion 4 and the rear edge portion 5. Instead, in the portion forward from the fixing portions 22, 22 in the front portion (i.e., in the portion which is located on the front side of the wearer when the sanitary napkin is used), the aforesaid folded condition of the flap 20 may be released gradually toward the front side in such a manner that the flap 20 takes a substantially flat surface-like shape. Similarly, in the portion rearward from the fixing portions 23, 23 in the rear portion (i.e., in the portion which is located on the rear side of the wearer when the sanitary napkin is used), the aforesaid folded condition of the flap 20 may be released gradually toward the rear side in such a manner that the flap 20 may take a substantially flat surface-like shape. In cases where the flap 20 is formed in this manner, the shape of the antileakage surface 24, which is substantially parallel to the skin-contacting sur-

face 2, and the side pocket 25 can be formed and kept reliably.

Also, instead of the fixing being carried out in the contacting portion 6, the fixing described above may be carried out in the front portion and the rear portion of the sanitary napkin 1.

Furthermore, in the twenty-first embodiment shown in Fig. 33, the wing portions 30, 30 are formed at the positions corresponding to the contacting portion 6. However, no limitation is imposed on the positions of the wing portions 30, 30. For example, the positions of the wing portions 30, 30 may be shifted forwardly or rearwardly.

Further, the wing portion 30 may be formed by adhering the other sheet to the surface of the backsheet 12. In such cases, as the material for forming the other sheet, any of materials similar to the materials of the backsheet 12, the antileakage sheet, and the topsheet 11, and the like, may be employed.

While the slipping-off preventing agents 15, 15 are not shown in Figs. 7 to 9 and Figs. 11 to 33, the slipping-off preventing agents are provided on the skin-uncontacting surface 3 of the backsheet 12 of the sanitary napkins shown in Figs. 7 to 9 and Figs. 11 to 33 in the same manner as in the sanitary napkin shown

in Fig. 2.

The absorbent article in accordance with the present invention is not limited to the sanitary napkin as in the embodiments described above and is also applicable to the other absorbent articles, for example, disposable diapers.

Many other variations and modifications of the invention will be apparent to those skilled in the art without departing from the spirit and scope of the invention. The above-described embodiments are, therefore, intended to be merely exemplary, and all such variations and modifications are intended to be included within the scope of the invention as defined in the appended claims.

CLAIMS:

1. An absorbent article having a central absorbent body comprising an absorbent member between a liquid permeable topsheet which in use contacts the body of the wearer and a liquid impermeable backsheet, and lateral flaps extending from the surface of the absorbent article which in use faces away from the body of the wearer, said flaps being folded to form antileakage walls, and, outwardly of the antileakage walls, antileakage surfaces substantially parallel to the liquid permeable topsheet.

2. An absorbent article having a central absorbent body having opposed surfaces which in use respectively contact and do not contact the skin of the wearer, the central absorbent body comprising a liquid permeable topsheet, a liquid impermeable backsheet and an absorbent member interposed between the topsheet and the backsheet, and a pair of flaps at opposite sides of the central absorbent body, the absorbent article being characterised in that:

each of the flaps is connected to a surface of the absorbent article which, in use, does not contact the skin of the wearer,

the flaps form antileakage walls along sides of the central absorbent body,

each of the flaps is folded outwardly from the central absorbent body to form an antileakage surface

which antileakag surface has a portion which in use contacts the point of liquid discharge from the wearer and is substantially parallel to the skin-contacting surface of the absorbent article.

3. The absorbent article according to claim 1, wherein antileakage walls are formed by folding the flaps toward the topsheet of the central absorbent body and by securing the flaps to the central absorbent body of portions to the front and to the rear of said portion which in use is in contact with the point of liquid discharge.

4. The absorbent article according to claim 1 or 3 wherein the or each antileakage surface is provided with an elastic member.

5. The absorbent article according to any preceding claim wherein each flap is formed by fixing together an extended portion of the topsheet and an extended portion of the backsheet.

6. The absorbent article according to any of claims 1 to 4, wherein each flap is formed by the topsheet or the backsheet.

7. The absorbent article according to any of claims 1 to 4 wherein each flap is formed by a sheet additional to

the topsheet and the backsheet, the additional sheet being waterproof or liquid impermeable.

8. The absorbent article according to any preceding claim, wherein wing portions for fixing the absorbent article in use are provided in such a manner that the wing portions are connected to opposite sides of the absorbent article at a surface which, in use, does not contact the skin.

9. The absorbent article according to claim 8, wherein each of the wing portions is formed by a portion extending from a lateral edge of the backsheet, these extended portions being located adjacent the portion which, in use, contacts the point of liquid discharge.

10. The absorbent article according to claim 8, wherein the wing portion is adhered to the flap at a position slightly above the level of the surface of the absorbent article which, in use, does not contact the skin.

11. The absorbent article according to any preceding claim, wherein a wing portion for fixing the absorbent article is formed by extending the antileakage surface.

12. The absorbent article according to any preceding claim, including a first flap and a s cond flap, the first flap being formed by at least an extended portion

of the backsheet, the second flap being formed by an antileakag sheet, the lower portion of the second flap being secured to the first flap, and the antileakage wall and the antileakage surface being formed by the second flap.

13. The absorbent article according to claim 12, wherein the antileakage surface is provided with an elastic member.

14. The absorbent article according to claim 12, wherein the antileakage wall, in portions to the front and to the rear of the portion in contact with the point of liquid discharge, is secured to the central absorbent body at the sides of the surface of the absorbent article which, in use, does not contact the skin.

15. The absorbent article according to claim 12, wherein the antileakage wall, in portions to the front and to the rear of the portion in contact with the point of discharge, is secured to the surface formed by securing the lower portion of the second flap to the first flap.

16. The absorbent article according to claim 12, wherein the surface which, in use, contacts the skin of the wearer is provided with a wing portion having an adhesive portion for adhering the absorbent article to shorts.

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Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): A3V; A5R (RPF, RPG)

Int Cl (Ed.6): A61F 13/15

Other: -

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X	GB 2271501 A	(Uni-Charm) see p.3 l.4 - p.4 l.7, p.5 l.7 - p.6 l.14 and Figs. 2 and 3	1,2,4-6
X	GB 2182841 A	(Procter & Gamble) see p.2 ll.2-18 and 50-86 and Figs. 1-3	1-5
P,X	WO 95/08972 A1	(Procter & Gamble) see p.3 l.12 - p.4 l.2, p.8 ll.8-22 and Figs. 1-6	1-6

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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